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sweaters • swim suits • infantswear • knit fabrics • polo shirts • gloves • headwear

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Vol. 29 MONDAY, AUGUST 29, 1960 No. 35

Wool Production Highest Since '46

WASHINGTON, D. C. — horn wool production in the nited States this year is esti- ated at 265.3 million pounds rease basis by the Agricultural arketing Service, U. S. De- artment of Agriculture, in its eview of the wool situation sued earlier this month.

The 1960 estimate, according the Bureau, is three percent excess of 1959 shorn wool utput and the highest since 946. Production in 13 western tates, including South Dakota nd Texas, is estimated by the gricultural agency at 189.2 illion pounds, six percent ore than in 1959 and 15 per- ent above the average of 1949- 8. Texas, which is the leading heep producing state in the ountry, will have a clip this ear of about 50,000,000 ounds, which is seven percent igher than in 1959.

Mill consumption of raw ool during January to May of is year was down somewhat om the previous year. The mount of wool used by domes- c mills during the first five onths of the current year talled 178.3 million pounds, oured basis, as compared with 83.4 million pounds for the mparable period last year.

Wool top production amount- to 55.7 million pounds in the nuary to May 1960 period, as gainst 59.1 million pounds for e comparable period in 1959.

Consumption of fiber on the orsted spinning system during nuary to May, 1960, totaled 2.4 million pounds, six per- nt less than the first five months of last year. Total use of wool in the grade 50s to 60s on the worsted spinning system increased in the period compared with a year ago, but use of 60s and finer and 48s and coarser wool grades decreased. The amount of wool used in the spinning of yarns on the woolen system was also down, amounting to 146 million pounds and representing a two percent decline from fiber consumption on this spinning system in a like period last year.

Reporting on the world wool situation, the AMS quotes the fine agricultural service as estimating that 1960-61 world wool production will reach the record total of 5,625,000 pounds grease basis, up 50,000,000 pounds or about one percent from the estimate for the 1959-60 period. The report notes that world wool prices at the Australian and London auctions dipped somewhat in late June and early July. Up to that time the prices had been relatively stable.

New FTC Ruling Strikes At Buyer Inducing Advertising Allowances

In a decision of major significance handed down last week, the Federal Trade Commision has held that a buyer who induces discriminatory advertising allowances, knowing or having reason to know that they are discriminatory, is guilty of unlawful conduct.

The ruling was made in an order requiring the Grand Union Company, the giant 340-store supermarket chain, to stop inducing disproportional advertising allowances from its suppliers. The principles of the decision are expected to have far-reaching application and particularly important consequences in the ready-to-wear market.

Although discriminatory advertising allowances are specifically declared unlawful under the Robinson-Patman Act, the language of the statute places that particular prohibition upon the seller. Similarly, it is the seller who is specifically prohibited by the words of the law from granting a customer discriminatory price concessions, rebates, brokerage commissions or other compensations, services or facilities. The only phraseology in the law which specifically runs against the buyer prohibits him from receiving or accepting brokerage commissions or discriminatory price concessions.

The question, therefore, was whether the Federal Trade Commission had the power under the anti-trust law to restrain Grand Union or any other buyer from inducing and receiving from its suppliers discriminatory advertising allowances.

The noteworthy point about

(*Continued on Page 78*)

Wyner Purchased By Ames Textile

I. A. Wyner & Company, Inc., manufacturer of knitted jersey fabric, has been purchased for an undisclosed amount by Ames Textile Corp., it was announced by the heads of the two firms.

Ames, one of the nation's leading manufacturers of woven wool goods and yarns, will be going into knitwear for the first time in its history. It views the field as one of the most profitable in textiles.

Broadening of the Wyner operation is planned to include a

(*Continued on Page 77*)

Confidence In Re-Orders Is Seen In Children's Knitwear Market

A consensus of firms in the infants' and children's knitwear market presents a picture of seasonal development somewhat slower this year than last, but firm in the confidence that re-ordering will eventually develop in good volume, though later than usual.

In these respects the survey tends to confirm similar trends found in men's knitwear and in the women's sweather market previously reported here. But, unlike those other areas of the industry, being more stable in character, the infants' and children's knitwear shipments and business bookings up to this point, though retarded in development, have caught up with the totals for the corresponding period of last year. The turning point developed in late July when the need for goods began at last to express itself and some compensation was recorded for the earlier slack.

(*Continued on Page 75*)

SPECIAL ISSUE: Annual Dyeing and Wet Processing Review

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Dyeing And Finishing Review

New Dyes And Equipment Developed

By CHARLES REICHMAN, Editor

DYESTUFFS with improved light and wash fastness and other performance properties, bleaches producing superior whiteness and finishes capable of protecting knitted garments against stains and the discoloration and odors of perspiration, are among the numerous new developments that have come upon the knit goods dyeing and finishing scene in the past year. In addition to these new chemical aids for upgrading the quality, performance and consumer appeal of knitted apparel, the period since the publication of the previous edition of this special issue also has witnessed the introduction of new types of equipment designed to speed the knitgoods dyeing and finishing process, as well as to turn out knitted products endowed with truer, more level colors.

Dyestuff Trends

Dyers servicing the knitgoods industry have never had a wider assortment of dyestuffs for coloring knitting yarns, knitted fabrics and sweaters and other knitted garments as are now being offered by the various manufacturers of textile chemicals. Aside from a broader range of the conventional coal-tar dyes, the textile chemical producers have concocted new coloring agents derived from petroleum, the same type of chemical building block from which many of the synthetic fibers are manufactured.

Most of the new dyestuffs that have come on the market during the period under review have been perfected for application to the growing number of synthetic fibers available for knitted and other textile end-uses. However, dyestuffs for the traditional natural fibers, largely wool and cotton, have not been overlooked by the makers of textile chemicals. In fact, the work in this area has been especially significant.

Wool Dyestuffs

Although the range of wool dyes is already staggeringly broad and far greater than for synthetic fibers, it is wrong to assume, as many in the industry have been prone to do, that the need for new types of dyes for wool is not as pressing as for the man-made fibers.

The difficulties of applying color to wool may not be as grave or troublesome as in the dyeing of synthetics, but problems still exist. Moreover, despite the advanced stage of wool dyeing technology, there is always a compelling demand for wool colors having superior light and wash fastness properties. The demand is ever present, too, for faster and more economical ways of dyeing wool with the newer dyestuffs. With wool now accounting for a larger share of the industry's fiber consumption, the extensive range of new wash and light fast acid, chrome and even vat dyes for wool will prove handy.

Cotton Dyestuffs

The big news in dyestuffs for coloring cotton knits are the reactive dyes. These are a special class of coloring agent which actually "reacts" with the fiber and becomes an integral part of it, because it combines chemically with it. Conventional dyestuffs do not operate in this way; they merely impregnate the fiber.

Although initially developed for cotton and other cellulose-base fibers such as rayon, acetate and triacetate, reactive dyes are also applicable to wool and to some synthetic fibers. (Editor's Note: See details on the application of one class of reactive dyes, the Procions, elsewhere in this issue.)

Reactive dyes can be an especially big boon to the industry's knitted yardgoods section where cotton is the principal raw material. With reactive dyes, knit yardgoods dyers can turn a number of processing tricks. A particularly interesting one, which has been worked out recently, enables the dyer to resin-finish the cotton knit fabric at the same time that the cloth is being dyed with the reactive dyestuff; no separate dyeing and finishing steps are required as with the common classes of cotton dyestuffs.

Most of the synthetic fiber dyestuffs that have been introduced in the past year are geared for application to such acrylic fibers as Orlon and Acrilan. Ever since it was found that excellent medium and dark shades could be applied to these polyacrylonitrile-base fibers with cationic (basic) dyes, the palette of colors for this class of synthetic fibers has been progressively expanded. One dyestuff manufacturer now has 25 different dyestuffs available for coloring Orlon Type 42; a year or two ago, the number of such dyestuffs in this manufacturer's line was roughly half.

The fact that the acrylic fibers now coming on the market have an improved inherent whiteness makes them more susceptible to rapid dye pick-up. As a result, retarders have come into wider use than previously in the dyeing of these fibers. This is reflected in the much broader range of dye retarding agents that have been developed by the various textile chemical companies.

Not all the new dyestuffs developed for the acrylic fibers require retarding agents. An interesting development along this line is the range of Calcozine acrylic fibers perfected by American Cyanamid Co. One of the significant claims made for these dyes is that they can be used to color Orlon, both Type 42 and Sayelle, Acrilan, Creslan and other similar acrylic fibers without retarders. By using these coloring agents, a dyer apparently can not only speed the sweater dyeing process but do it somewhat more economically than under the existing methods. (See article on Calcozine dyes elsewhere in this issue.)

Textured Yarn Dyestuff

For textured nylon yarns, the emphasis in dyestuffs has been on the acid colors offering good resistance to light fading, perspiration and crocking, and which at the same time can come through the AATCC Wash Test No. 2 with "flying" colors. The problem of barre limits the use of acid dyes on textured nylon yarn. However, most dye-

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stuff manufacturers have come out with chemical treatments to control, if not eliminate, this difficulty. Latest such product is Calco Leveling Salt IV developed by American Cyanamid Co.

Bleaching Agents

The chief bleaching agents used by knitgoods dyers are hydrogen peroxide for wool and cotton, sodium chlorite for the various synthetic fibers and fluorescent whitening agents for all classes of fibers. Use of the latter in the industry has been growing in the past year for both natural and synthetic fibers. These colorless dyes are the basis not only of the so-called "whiter white" wool yarns but they are also applied to the whiter, more dyeable acrylic fibers now on the market, such as Orlon 42 and Acrilan 16.

Employment of sodium chlorite as a bleaching agent is basic to a good white job on an acrylic fiber, but with some of the new whiter versions of the acrylic fibers it may not be necessary unless a pure white garment is produced. Sodium chlorite is a vigorous oxidizing agent that can be harmful to both personnel and equipment. The former can be controlled by adequate ventilation. Its damaging effects to equipment are not as easily avoided; generally, most mills utilize equipment made of a special corrosion-resistant metal. A recent development, however, makes such specialized equipment unnecessary. The corroding influences of sodium chlorite can be overcome by using ethyl lactate simultaneously with the sodium chlorite. The ethyl lactate curbs the formation of chlorine dioxide, the cause of the metal destruction.

Greater Substantivity

Optical bleaches when they first came on the market were substantive only to one kind or class of fiber. Thus, the optical bleach used on Orlon was not necessarily applicable to wool or to a synthetic fiber of a wholly different chemical group. Now, however, optical bleaches are being developed which have a broad spectrum of substantivity.

The bleaching of wool with hydrogen peroxide until recently could be performed only under alkaline conditions, but now with a new acid fluoride stabilizing agent the hydrogen peroxide bleaching of wool in an acid state is made possible. Dyers using the acid method of hydrogen peroxide wool bleaching get a bonus in the fact that the treatment at the same time that it bleaches the wool also mothproofs it. But the protection against moth attack is short-lived; it lasts only until the first washing of the wool yarn.

Equipment

Dyeing equipment manufacturers are intensifying their efforts to effect continuous processing machinery for scouring, bleaching and dyeing of knitted fabrics and textile fibers in various semi-processed forms. Continuous processing is already standard procedure in the bleaching of tubular knitted yardgoods, but the operation of the continuous bowls in tandem with scouring kiers and dye vessels or becks is another matter. One of the most widely studied exhibits at the Milan Exhibition last year was an Italian unit for continuous scouring, bleaching and dyeing of wool top, synthetic fiber tow or processed yarn. Actually, the unit was one of a number of similar developments which caught the eye of U. S. dyers and finishers attending the international machinery show.

Another significant innovation in this direction, of more recent date, is the Fleissner dyeing range for wool tops. This company has also perfected a continuous system for bleaching, dyeing and after-treating woven fabric; on the company's drawing boards is a similar installation for tubular knitted yardgoods.

Want Continuous Units

Continuous dyeing is, of course, the ultimate processing ideal of most dyers and finishers —and understandably so. Not only is it shorter than conventional dyeing methods, but it is speedier and requires far less handling of the stock. In the long run continuous processing is also more economical, assuming the dyer has long processing runs.

In terms of economy, however, continuous dyeing train falls short of the mark when only small quantities of material are involved in the dyeing operation. It has other disadvantages. The very fact that continuous dyeing is speedier can create a big headache for the dyer. The goods in most continuous dyeing ranges now on the market pass through the equipment so quickly that there is in many instances insufficient time for affixing the dye onto the fabric. But one dyestuff company claims to have worked out a technique which overcomes this problem. The way out of this difficulty is by pretreating the material with a dye assistant. The operation of continuous dyeing, as it applies to woven fabrics, involves a three-stage operation:

- Padding of the dyestuff onto the stock previously prepared with a dye assistant.
- Fixing the dyestuff by steaming, much like the application of steaming or flash aging techniques in roller printing.
- Acid developing and then soaping and scouring off.

Beam Dyeing

Not to be overlooked in any discussion of new trends in dyeing equipment is the current experimentation among some knitted fabric manufacturers in the application of the beam dyer to tubular knitted yardgoods. There is nothing new about beam dyeing; it is a relatively accepted dyeing procedure for some types of material. Its use in connection with the dyeing of tubular knitted yardgoods is of recent origin; in fact, at the Milan Textile Exhibition last October a few dyeing equipment manufacturers gingerly featured their beam dyers as suitable equipment for the dyeing of continuous knitted fabric made of various synthetic fibers. Actually, there is no reason why the beam dyer cannot be employed on knitted yardgoods. What is needed is more knowledge of the technique and a greater willingness on the part of knitted yardgood producers to experiment with this method.

Beam dyeing on analysis is found to be merely an application of traditional package dyeing techniques to continuous lengths of fabric. Just as yarn in package dyeing is wound onto a dye tube and dyed in this form, in beam dyeing the fabric is wound onto a beam and dyed that way. The beam like the dye tube is a perforated cylinder but, of course, many times larger. In both techniques the dye liquor is forced through the stationary fabric, a principle different from the method of dyeing yardgoods in becks.

In the present stage of the application of beam dyeing to knitted yardgoods, it is mostly suitable for synthetic fiber fabrics and for synthetic and wool content fabrics having a generally low percentage of the natural protein fiber. Dyeing is done at 230° F. to 250° F. Its advantages include a saving on dyestuff, more thorough penetration of the dye into the fabric which makes for improved wash and light fastness, and a shorter dye cycle.

Basic equipment for dyeing knit goods in sweater and strip form has undergone little change in the past year, except that equipment manufacturers are now making machinery available in large poundage capacities and fitted with various types of sensitive temperature and other controls.

Package Dyeing Trend

In a move toward greater diversification, sweater dyers are extending their operations into the package dyeing field. This is true not only of those firms that have made their mark as specialized garment and sweater strip dyers but also of the dye houses that are already fairly well diversified. Although a reflection in part of the increasingly competitive character of the sweater dyeing business, the move into package dyeing principally is an attempt to regain some of the Orlon yarn dyeing volume that over the past few years has been going in steadily rising quantities to the specialized package dyers; larger poundages, even of coarser denier Orlon yarns for bulky knit sweaters are now processed via the package dyeing route than the skein dyeing method. While the latter in the final estimate produces a superior dyeing job, package dyeing is in comparison a less costly process. Another advantage of package dyeing is that it is a large individual lot operation; the capacity of a typical package dyeing set-up generally is far in excess of that of the average skein dyeing unit. It is true, of course, that package dyeing requires a good deal of ancillary equipment, particularly tube-to-cone winders. But despite this, it is basically still a more economical method.

Many of the sweater dyers planning to add package dyeing

(*Continued on Page* 65)

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Dyeing Technology

Dyeing and Finishing Yarns, Knitwear of Orlon Sayelle

By CHARLES Z. KERESZTES
Technical Service Section, Textile Fibers Department
E. I. du Pont de Nemours & Company

LARGE quantities of knit goods have been made with Orlon Sayelle bi-component acrylic staple since the introduction of this fiber to the market last October. By virtue of its new and entirely different properties, Orlon Sayelle exhibits outstanding liveliness, bulk and loft, in addition to the well known aesthetic and performance advantages of Orlon. This unique combination of properties has been displayed most successfully in bulky sweaters of many types, knit dresses, half-hose, and hand knitting yarns. New fields of application can be expected as additional textile technology is developed.

Experience has shown that this fiber may be dyed to a complete shade range with excellent color fastness. Most manufacturers have selected the skein dyeing route. Some have used package-dyed yarns; others have preferred piece-dyed goods. For multi-colored or heather yarns, top-dyed fibers have been used.

From the dyeing and finishing point of view Orlon Sayelle differs from the well-known Orlon Type 42 mainly in its crimp properties and in its increased dyeing rate with cationic dyes.

The loft and bulk of goods made of this fiber is produced by random spiral crimping of individual fibers within the yarn bundle. In this respect, it is unlike high-bulk yarns of Orlon Type 42 acrylic fiber in which bulk is obtained by a blend of high and low shrinkage fibers. To activate the built-in crimping potential of the fibers, goods of Orlon Sayelle bi-component acrylic staple must be wet treated at some point for a minimum of 15 minutes at or above 208 degrees Fahrenheit. Relaxed drying then develops the full crimp. This crimp is permanent and reversible; that is, when the fiber is rewetted, a temporary reduction in crimp occurs. Recrimping will take place automatically as water is removed by drying. The crimp can be pulled out or removed mechanically during processing, winding and knitting, but it always returns during relaxed drying.

As a result of this permanent reversible crimp characteristic, knit goods of Orlon Sayelle will reshape themselves each time they are laundered and will eliminate distortion induced by wear.

Garments of Orlon Sayelle may be machine washed and tumble dried or hand washed and dried on a flat surface.

The dyeing properties of Orlon Sayelle differ somewhat from Orlon Type 42. Cationic dyes begin to dye Orlon Sayelle at 180° F., and by the time the temperature reaches 210° F. the dye bath is practically exhausted. Therefore, a major portion of the dyeing time with Orlon Sayelle must be spent between 180° and 210° F. Orlon Type 42, on the other hand, starts dyeing at a higher temperature, and relatively more time may be required at the boil.

In general, the dyeing and finishing technology developed by the trade for Orlon Type 42 acrylic fiber can be used for Orlon Sayelle bi-component acrylic staple, but must be modified in some cases because of the chemical and physical differences between the two fibers.

SCOURING AND BLEACHING—The scouring and bleaching formulations and procedures used for Orlon Type 42 will give good results on Orlon Sayelle. However, to achieve satisfactory crimp development and bulking of white goods of Orlon Sayelle during the drying, the bleaching or scouring bath temperature must be held at 208° F. for at least 15 minutes.

STRIPPING — The sodium chlorite or sodium hypochlorite stripping treatments used for Orlon Type 42 are recommended for Orlon Sayelle. After stripping, Orlon Sayelle can be redyed to any shade, even to jet black.

DYEING WITH DISPERSE DYES —Disperse dyes are used for the production of pastel and light shades. Their build-up on Orlon Sayelle is roughly the same or slightly less than on Orlon Type 42. The dyeing technology is very similar to that used for Orlon Type 42. The following disperse dyes are generally accepted for dyeing Orlon Sayelle:

Latyl Yellow 3G
Celanthrene Fast Yellow GL
Acetamine Yellow CG
Acetamine Orange GR
Latyl Cerise B
Celanthrene Red 3BN
Celanthrene Red Violet R
Celanthrene Fast Pink 3B
Celanthrene Violet BGF
Celanthrene Violet CB
Celanthrene Fast Blue 2G
Celanthrene Pure Blue BRS
Celanthrene Brilliant Blue FFS

All the disperse dyes on Orlon Sayelle bi-component acrylic fiber are shade sensitive to variations in the pH of the dyeing and finishing baths. Particularly severe shade changes can occur during the drying if the goods have been dyed on the acid side. Therefore, the disperse dye bath has to be kept neutral (pH about 7) for good shade control. The use of buffers in the dye bath has given very good results.

In the following procedure, percentages are based on the weight of the goods:

1. Enter the material in a bath at 120° F. Add 0.5 percent Duponol RA surface active agent . . . percent disperse dyes pasted with approximately an equal amount of Compound No. 8-S, stirred into hot water and then added to the dye bath.

2. Adjust the pH of the dye bath to 7 with: 1 percent tetrasodium pyrophosphate; 0.4-0.6 percent monosodium dihydrogen phosphate (NaH_2PO_4).

3. Raise temperature to the boil in 45 minutes.

4. Dye 45 to 60 minutes at the boil.

5. Cool slowly, rinse well.

6. Apply 0.5 to 1 percent cationic softener such as Velvetol AF (Quaker Chemical Products Corp.) at 120° F. for 15 minutes. Keep the finishing bath close to the neutral point (pH 7).

DYEING WITH CATIONIC DYES —Orlon Sayelle may be dyed with cationic dyes in a complete spectrum of shades ranging from pastels to bright reds, yellows, blues and jet black. Excellent light and wet fastness result.

The following selected cationic dyes are used for the dyeing of Orlon Sayelle:

Sevron Yellow R
Sevron Yellow 3RL
Sevron Orange G
Sevron Brilliant Red B
Sevron Brilliant Red 2B
Sevron Brilliant Red 4G
Sevron Red GL
Sevron Bordeaux G
Sevron Blue B
Sevron Blue BGL
Sevron Blue 5G
Sevron Blue 2G
Sevron Blue NF
Sevron Brown YL
Du Pont Victoria Green S. C.
Du Pont Fuchsine

The dyes listed above have been applied levelly to all types of material using the combination of Compound No. 8-S anionic dyeing retarder and precise temperature control.

The temperature of the dye bath has to be raised slowly and stepwise from 180° F. to the boil in 1½ hours (in case of skein dyeing in 2 hours).

Further control of the dyeing rate is provided by Compound No. 8-S anionic dyeing retarder. It forms temporary aggregates with the cationic dyes, the latter being gradually released to the fiber as the temperature is slowly raised. The aggregates are kept in dispersion with Alkanol HCS nonionic surface active agent. A general outline for the dyeing follows:

1. Set the bath at 120° F. with:
1.0% Alkanol HCS surface active agent
10.0% anhydrous sodium sulfate
—% cationic dyes
0.3% sodium acetate
—% acetic acid (pH 4.5-5.0)

2. Raise the temperature to 160° F. at 2° F. per minute.

3. Add slowly 2 to 4 percent Compound No. 8-S; 2 percent for blacks and navys, 3 to 4 percent for medium and light shades should be used.

4. Maintain the temperature of the dye bath at 160° F. or above during and following the additions of the Compound No. 8-S. If the temperature of the dye bath is cooled below 160°

(*Continued on Page* 39)

Coronet Piece Dye Works Expands Facilities to Offer Special Services

Coronet Piece Dye Works of Elmhurst, L. I. have greatly expanded their facilities for dyeing and finishing. Equipped with the most up-to-date machinery, they now offer a complete service for resinating of yarn-dyed cottons as well as dyeing and finishing of all tubular knitted fabrics—cottons, wools, wool blends, synthetics, synthetic blends and metallics. Typical of this forward-looking company is the choice of **Norane®** and **Permafresh®-Norane®** as the most advanced finishes of their kind. Coronet uses Norane exclusively in finishing cotton fabrics for lamination. Norane provides lasting water-repellency and improved hand, yet allows laminated fabric to take repeated launderings and dry cleanings without de-bonding. Coronet is enthusiastic about Permafresh-Norane for cotton stripes. Permafresh combined with Norane stabilizes fabric, gives wrinkle resistance and lasting wash and wear qualities as well as durable water-repellency. Whatever your particular finishing problem, chances are Coronet can solve it with a Warwick finish.

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Dyeing Technology

Procedure For Piece Dyeing Sweaters Of Acrilan

PIECE dyeing of sweaters, whether in the form of finished garments, or strips of sweater bodies, has been steadily gaining popularity. The advantages of piece dyeing are many. For example, the goods remain white almost until the point of sale; the risk involved in the speculation as to the consumer color preference is reduced to a minimum; the processing waste is white; odd lots of left over colored yarn are eliminated; there is no time lost in color changes on the knitting machines and no danger of contamination with the colored fly; the inventory problems are greatly simplified.

With all these advantages, however, piece dyeing until recently has had one serious drawback; namely, the color styling had to be limited to solid shades only. Attempts to use mixtures of natural and man-made fibers to obtain cross dye effects often led to difficulties because of widely varying physical properties; and for stripes, heathers, marl and other fancy effects the fiber had to be dyed in yarn, tow, or stock form.

A solution to this problem was offered this year by The Chemstrand Corporation when a new type Acrilan, Acrilan 16, was placed on the market. This new fiber has the physical properties of Acrilan and differs from it only in its dyeing characteristics. Thus Acrilan 16 has no affinity for acid dyes but can be dyed to a full range of shades with basic and disperse dyes.

The absorption of basic dyes by Acrilan 16 is virtually unaffected by the acidity of the dyebath. On the other hand, Acrilan loses its affinity for basic dyes in a strong acid medium. At the same time the strongly acid dyebath creates optimum conditions for acid dye absorption by Acrilan. If, therefore, Acrilan and Acrilan 16 are used in combination and are treated together in an acid dyebath containing both acid and basic dye, the Acrilan will absorb the acid dye and the Acrilan 16 the basic dye only. If no acid dye is added, then Acrilan will remain undyed and the Acrilan 16 will be dyed by the basic dye. If the acid dye is used alone, only Acrilan will be dyed and in consequence the Acrilan 16 component will remain white.

The differential dyeability of Acrilan and Acrilan 16 offer unlimited styling possibilities in stripes, heathers, marls, and other fancy effects when the two fibers have been used in combination.

The fabric is knitted in the desired style from undyed yarns, and both Acrilan and Acrilan 16 components are colored at will in a simple, single-bath piece dyeing operation.

With the exception of the dyebath composition, the dyeing procedure is identical with those commonly used for dyeing sweaters of acrylic fibers.

The sweaters are bagged in the usual fashion, allowing for sufficient freedom of movement of the goods inside the bag. Underloading must be avoided since it can lead to tangling. Loose threads, unraveling from the ends of the sweater-strips can also cause tangling and it is sometimes desirable to run a Merrow (overedging) seam across the ends of the pieces.

The goods are scoured either in the dyeing machine or in a washing wheel. Only a mild scour is necessary, preferably using a nonionic detergent and a mild alkali.

For a two-color cross dye effect the dyebath is set with one percent of a nonionic surfactant, four to six percent sulfuric acid, and ten percent anhydrous sodium sulfate. The basic dye is dissolved and entered into the machine separately. When the basic dye is evenly distributed the previously dissolved acid dye is added. The rate of heating from 160°F to the boil must be carefully controlled since this is the region where most of the dye exhaustion takes place. The maximum absorption of acid dyes by Acrilan occurs around 160-180°F., while the basic dye exhausts on Acrilan 16 in the 180-212°F region.

If, for reasons of levelness, it is desirable to slow down the absorption of the basic dye, a small amount of a cationic retarder can be added. The quantity of the retarder needed is much less than in the previous practice with acrylic sweaters. The rate of dyeing of basic dyes on Acrilan 16 is not unduly rapid, particularly in the case of blend dyeing where a longer than usual liquor ratio exists with respect to Acrilan 16.

Anionic surfactants, which are sometimes employed in the dyeing of 100 percent Acrilan 16, should not be used in dyeing of blends containing Acrilan. In an acid dyebath the anionic agent is absorbed by Acrilan which makes it unavailable for retarding of the basic dye on Acrilan 16 and may in addition interfere with the absorption, levelness and lightfastness of acid dyes on Acrilan.

Except for very heavy shades the first sample may be taken for matching after 30 minutes at the boil. For dye addition the dyebath should be cooled to 180°F. The dyeing should be run for a total of 60 minutes at the boil to ensure complete dye penetration.

When the correct shade is obtained the dyebath should be cooled slowly to 160°F to prevent creasing of the goods. This precaution applies to all acrylic fibers and is necessary only at the end of the dyeing cycle. Any intermediate cooling can be done quite rapidly since subsequent treatment at the boil will remove any creases that might have formed.

The goods are rinsed and then scoured for twenty minutes at 140°F. with a nonionic detergent and a mild alkali to neutralize the acid used. Following a second rinse, the desired finish is applied.

In planning a color range of cross-dye effects, the Acrilan should be used for heavier shades, while Acrilan 16 should be used for bright colors and pastels. This is in keeping with the characteristics of the two types of dyestuffs used and the improved natural color of Acrilan 16.

For the same reason, if one of the fibers is to be left white, the Acrilan 16 is the more practical choice. The dyeing procedure is identical with the one for the two-color effect except for the omission of the basic dye. For successful processing of the Acrilan/Acrilan 16 blends, the dyestuff for both fibers must be carefully selected. The primary consideration in the case of basic dyes is their ability to withstand the strong acid used in the dyebath. Most cationic dyes are quite stable to acid but a few undergo a color change and must be avoided. The acid dyes used must be

(*Continued on Page* 43)

This napped and sheared man's cardigan of 1/34's turbo-processed yarn illustrates a piece-dyed body fabric of 65 percent Acrilan/35 percent Acrilan 16. Border is of skein-dyed 100 percent Acrilan, 65 percent Acrilan/36percent Acrilan 16, and 100 percent Acrilan 16.

Woman's crew-necked cardigan, knit on 4 gauge flat-bed machine from 2/20's single-bath skein-dyed yarn, achieves a frosted effect through the use of a 90 percent Acrilan/10 percent Acrilan 16 blend.

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Dyestuffs Developments

Calcozine Dyes For Acrylic And Modacrylic Fibers

By DR. H. E. MILLSON
American Cyanamid Company

LEVEL dyeings in pastels through the heavier tones are features of a new line of acrylic dyes that American Cyanamid Company recently introduced to the domestic market for true and modified acrylics. The key to levelness lies in a radically different approach to acrylic dyes and to acrylic dyeing methods. With the dyes previously available, an excessive affinity between the dye and the limited number of dye sites on the acrylic fiber made the use of retarders a necessity in many cases if satisfactory levelness was to be obtained.

In Cyanamid's new colors, called Calcozine acrylic dyes, the attraction between dye and fiber is controlled by the positive charge which is distributed over the entire dye molecule. Because it requires only common salt and acetic acid to produce a controlled exhaust and, therefore, level dyeings, the dyeing method for the Calcozine line is cheaper, more rapid and more flexible than the retarder system now in use by many textile mills.

Procedure Outlined

The method recommended for dyeing Orlon Type 42 acrylic fiber with a Calcozine dye, for example, requires only two percent common salt and two percent of a well-diluted 28 percent acetic acid, based on a 40:1 liquor ratio. Recommendations for older dyes have required baths containing 0.5 percent glacial acetic acid, 10 percent sodium sulfate and 1-10 percent retarder. The lighter the shade, of course, the higher was the quantity of retarder recommended.

In addition to providing the knitter with a simpler dyeing procedure, the Calcozine line has "in-processing" advantages that result in shorter dye-bath cycles. Less time in the dye bath, of course, means greater production and, thus, greater economy. Of equal importance to the knitter, however, is the marked tendency to softer hand and greater loft that is produced by a shortened dyeing cycle and the elimination of retarders.

More complete exhaustion and better levelness at lower temperatures and more rapid diffusion of dye into the fiber are other "in-processing" advantages of the Calcozines. Microdyeoscope studies and examinations of cross sections of dyeings have shown another plus value, namely core-dyeing.

Reach the Core

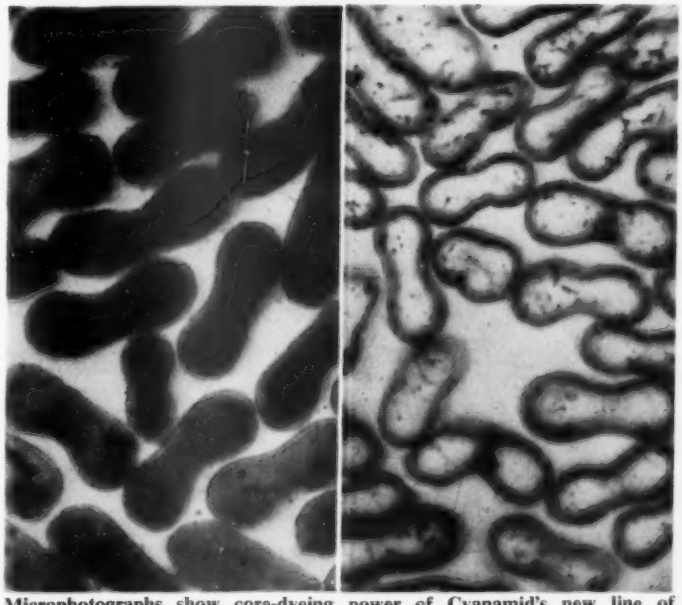
The Cyanamid acrylic dyes penetrate evenly to the core of the fiber. Most other dyes color only the outer part of the fiber. Knitters, therefore, can expect excellent build-up in the heavier tones and an exceptional range of level, pastel shades, which have been traditionally the most difficult tones to achieve in true acrylic fibers.

Unlike most of the acrylic dyes previously available, the Calcozines are not so sensitive to temperature changes. The rate of exhaustion for some temperature-sensitive dyes doubles between 200-206° F. and triples at 212° F. Such sensitivity to variations in temperature greatly increases the danger of producing uneven dyeings and, at the same time, decreases the flexibility permitted during the dyeing step.

The properties of the new Calcozines and their dyeing method are shown to considerable advantage in the dyeing of the new Orlon Sayelle acrylic fiber, which was recently introduced for high-bulk knits. In comparison with Orlon Type 42, Orlon Sayelle is considered more difficult to dye because of its stronger affinity for dyes and its greater sensitivity to pH variations.

Less Time Required

In the procedures recommended for dyeing Orlon Sayelle, the dyeing step alone requires about three hours. If level dyeings are to be obtained, the temperature of the dye bath must be raised slowly and gradually. Temperature controls ranging from ½-2° F. per minute are recommended.



Microphotographs show core-dyeing power of Cyanamid's new line of Calcozine acrylic dyes. The acrylic fibers on the left have been colored with the new Calcozine Acrylic Red 3G. The color has penetrated evenly to the core, resulting in a fiber that is deeply and fully dyed. The acrylic fiber on the right is colored with a product that was previously considered the best of the dyes available for acrylic fibers. Microphotography clearly reveals that this older dye—which requires the use of expensive retarding agents—colors only the outer edges of the fiber, without penetrating to the core. In both cases, the manufacturers' recommended dyeing procedures were followed, on Orlon acrylic fiber. Further tests with the other Calcozine colors show identical results—core dyeing to the heart of the fiber.

With the Calcozine dyes, the time necessary for level dyeings on Orlon Sayelle is cut in half, and exact temperature controls are eliminated. After checking the pH to be sure it is in the 4.5-5.0 range, the dyer begins the dyeing cycle at 100° F. and raises the temperature of the bath to 180° F. over a twenty-minute interval. The bath is maintained at 180° F. for ten minutes and then raised to 205° F. over a twenty-five-minute interval. Running the bath for one hour at 205° F. completes the dyeing step, which requires only 1 hour and 45 minutes.

After-scouring with Calcozine dyes is milder and requires only 0.5 percent Deceresol NI Conc. and 0.5 percent of 28 percent acetic acid. Time and temperature requirements are 15 minutes at 160° F.

If a Calcozine acrylic dyeing should come out uneven, it can be readily corrected by adding 10-20 percent (o.w.f.) common salt to the dye bath. Within 20 to 30 minutes, the lot will usually boil level. To strip older type dyeings, a fresh bath containing retarder, glacial acetic acid, anhydrous sodium sulfate and a leveling agent is recommended.

Ease in Stripping

Calcozine acrylic dyeings that are too heavy can be partially stripped simply by adding 40 percent (o.w.f.) common salt. If a fresh bath is desired, a one percent solution of common salt boiled for 20-30 minutes will remove 20-40 percent of the Calcozine dyes. The ease of levelness and stripping of these dyes provide greater control and flexibility in the dyeing step. In addition, the easy stripping of the Cyanamid dyes will mean fewer redyes and seconds.

In contrast, most other acrylic dyes can be stripped from Orlon only by drastic methods. Boiling with a combination of either Textone and nitric acid or of sodium hypochlorite, acetic acid and sodium nitrate is required. With either method, subsequent treatment with an antichlor is recommended. Because neither of these combinations can be

(*Continued on Page* 55)

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Dyeing And Wet Finishing Review

Cationic Dyestuffs For Coloring Acrylic Fiber Material

GERMAN dyers of acrylic fibers prefer cationic dyestuffs developed largely by the makers of the fibers. Cationic dyestuffs emerged as favorites after a trial-and-error period of several years following industrial scale output of acrylic fibers beginning in 1953. Most of the disperse dyestuffs first tried have been replaced, only those applying pastel colors to knitting yarns of bulky properties being retained for acrylic fibers.

Germans have replaced many U.S. and Swiss dyestuffs based on cupro-nitril compounds which they had adopted as a great improvement toward dark colors on acrylic fiber material. Specific basic dyestuffs attachable without previous mordant application, and German-developed leuco vat acid esters which never reached the industrial stage of acrylic fiber dyeing, were also discarded in favor of the cationic dyestuffs.

Cationic Advantages

German textile technicians base their preference for cationic dyestuffs on acrylic fibers on four advantages:

1. Carriers or expansifiers are not needed.
2. The dyestuffs are suitable for color combinations in practically any proportion.
3. Colors are extremely fast in both further processing stages and use of the finished product.
4. The dyeing effect is reserved chiefly on the acrylic components when mixtures with wool or cellulose fibers are dyed.

A prominent German line of cationic dyestuffs for acrylics is the Astra and Astrazon series. The properties claimed include resistance to heat-setting and pleating finishes; resistance to chloride bleaches used in material containing mixtures of acrylic and cellulose fibers; resistance to the sodium hydroxide-hydrosulphite treatment in the vat and the finishes which produce crease resistance; and resistance to peroxide bleaching and caroonizing used on materials containing mixtures of acrylic fibers and wool. This German dyestuff line alone includes 34 colors of which 19 are specially lightfast.

Process Explained

The mechanics of cationic dyeing of acrylic fibers have been analyzed by the German experts Dr. O. Glenz and Dr. W. Beckmann as a sequence of absorption, dissolving and attachment. Eventually the dyestuffs are attached to negatively charged groups of the fiber. If the proper point of attachment, or true saturation, is missed, the dyestuffs are merely dissolved in the fiber. The result is deterioration of general fastness properties; in addition, dyestuff extraction from the dye bath is incomplete and the unattached dyestuffs block each other. The proper point of attachment is easily determined by analyzing the interrelation of the molecular weight and pure content of the dyestuff with the number of dyestuff-binding groups of the acrylic fiber.

The speed of cationic dyestuffs in attaining the proper grade of attachment on acrylic fibers depends on four factors in addition to intrinsic dyestuff properties. These are:

- Fiber type.
- Dyeing temperature.
- Dye bath acidity.
- Dyestuff concentration.

The latter is the proportion of the number of ionizable groups of the fiber and dyestuff volume, and can be regulated by retarders. Dye bath acidity increase reduces attachment speed. Fiber type, representing a known stable valence, is of greater importance for attachment speed, and so is dyeing temperature.

German textile technicians have found that at temperature in the vicinity of 100 degrees C., the attachment speed increases or declines by 30 percent with each one degree C. added or subtracted. This makes it possible to control dyestuff affinity to the fiber by increasing dye bath temperature slowly, particularly after reaching 90 degrees C. At the same time, complete dye extraction from the dye bath requires dyeing temperatures between 96 and 98 degrees C., especially for dark colors.

Dyeing Procedure

Typical cationic dyeing processes of German practice begin with acrylic fiber preparation. The material is washed by a non-ionogenous detergent contained at the rate of 0.5 to 1 gram per liter in a weak alkaline bath at temperatures between 55 and 70 degrees C. for 10 to 20 minutes, and then rinsed at 50 to 60 degrees C. Anionic detergents are not used; nor is ammonia used as an alkalizer.

Meanwhile, the weighed dyestuff is converted into thick, nonclogging paste by adding acetic acid. Water at 90 degrees C., in an amount forty to fifty times the paste volume, is then poured over the paste to dissolve it while stirred. Boiling of the solution is not necessary.

The dye bath should be 40 to 50 degrees C. Acidity is regulated by adding 0.5 to two percent sodium acetate and one to 2.5 percent acetic acid. A nonionogeous dispersing, 0.5 to one percent, is added to keep dyestuff from adhering to the dyeing apparatus. If light and medium colors are to be produced, a retarder is added, 0.5 to one percent (percentages proportionate to original dye bath volume).

In this dye bath, the acrylic material is saturated briefly before the dissolved dyestuffs, run through a filter cloth, are entered and well distributed in the bath. Temperature if increased slowly to between 96 and 98 degrees C. is maintained for the dyeing period of one to two hours. Alternatively, cationic dyestuffs can be used in high temperature dyeing equipment, using temperatures between 105 and 108 degrees C. to reduce the dyeing period.

Dyeing Staple, Tops

Germans use standard pack dyeing machinery for cationic dyeing of acrylic staples if it can provide sufficient dye bath pressure while working at the mandatory 98 degrees C. Anionic preparations, usually clinging to acrylic staples, are removed by the normal washing process prior to dyeing. Cleaned staples, distributed evenly when fed into the unit, are packed tight by spraying with hot water. After the dyeing, staples receive an antistatic treatment. Specific lubricating agents are applied for use of the staples either in cotton spinning or wool spinning. Lubricant application is followed by centrifugal hydroextraction, without rinsing, and by drying at moderate heat.

For tops, Germans use the peg-on method in any dyeing apparatus which provides sufficient bath pressure at boiling temperatures. Bath circulation is in one direction, inside to outside. Bobbins carrying the tops are wound tightly and evenly. Apparatus equipped with perforated cans is preferred; alternatively, bobbins are wrapped in nets. The usual pre-washing is followed by cationic dyeing, washing, lubrication, and hot-air drying at 80 to 100 degrees C.

Yarn Dyeing

The German method is similar for cationic dyeing of normal acrylic yarn either in the hank or on traverse-wound bobbins. The low specific weight of the fiber requires careful dosing of hank charges to the apparatus; excessive charges impair color evenness. The bobbin wind must allow for the thermoplastic softening of acrylic yarn in the 60 to 70 degree C. range; bath circulation in one direction, preferably inside to outside, helps prevent bobbin deformation.

Dyeing of high-bulk yarn is a special problem, and either disperse or cationic dyestuffs are used in Germany. The process includes washing, shrinking (sometimes combined), dyeing, gradual cooling, a soft-handle finish, hydroextraction, and drying at 50 to 60 degrees C. Three shrinking methods are used alternatively:

- A weak alkaline bath for dark colors.
- An acidulous bath for light pastel colors.
- Saturated steam for any color if the yarn contains spun-dyed fibers.

Volume reduction by either shrinking method is 20 to 25 percent.

Piece Dyeing

German textile technicians find piece dyeing of acrylic fiber fabrics still somewhat difficult. Only lightweight fabrics, up to about 125 grams per square

(*Continued on Page* 59)

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Dyeing And Finishing Blends Of Orlon And Cotton

By L. BIDGOOD, JR.
Technical Service Section, Textile Fibers Department
E. I. du Pont de Nemours & Company

AN upsurge in the use of blended yarns of Orlon acrylic fiber and cotton by knitted outerwear manufacturers appears imminent. Intensified sampling activities and technical inquiries mark the growing interest in this blend. Several promising commercial programs have been born. Progress in marketing knitgoods of Orlon and cotton has been necessarily accompanied by the development of new technology. We shall outline the technical advances in dyeing and finishing that have paved the way for volume sales of blends of Orlon and cotton.

TECHNICAL ADVANCES — During the last year or so, important technical advances have been made in three principal areas of dyeing and finishing that are of direct interest to the processors of knitwear of Orlon and cotton.

The first achievement consists of getting a white on blends of Orlon acrylic fiber and cotton to match existing standard whites on 100 percent cotton. The fact that this was a problem at all may be surprising to readers who are familiar with the excellent whites that are routine on sweaters of 100 percent Orlon. The question was primarily one of different standards built up around different fibers. In sweaters where wool was king and set the standard for many years, it was quite easy for Orlon to meet and surpass the goal white. In fact, standards for sweaters have been continually revised toward a more brilliant white as made possible by stepwise improvements in the Orlon fiber.

In fabrics worn next to the skin — sport shirts, underwear, sleepwear and socks — where cotton perhaps has been the dominant fiber, a different standard was developed. The so-called cotton white is based on bleached, tinted and white dyed (fluorescent or optical whitener) cotton. In a technical sense, the bleached whites on 100 percent Orlon or on blends of Orlon and cotton have matched the best cotton white; that is, the Adams' color coordinate values that have been the same. From a practical standpoint, the high fluorescence of white dyes on cotton has been up to now very difficult to match on Orlon. Orlon can and is being dyed with white dyes regularly, but the white dyes do not "build up" or give so marked effect when dyed on Orlon as they do on cotton.

The second important technical advance has overcome a dyeing problem. Excellent unions have been obtained on blends of Orlon acrylic fiber and cotton, but cross dyes and heathers were not entirely satisfactory in some instances. This difficulty was attributed at times to faulty dyeing techniques, and at other times to uneven yarns. Actually, the dyeing techniques and the yarn evenness have been generally satisfactory. The problem stemmed from uneven blending or mixing of the Orlon and the cotton.

Cross dyeing shows up the exact position of each fiber within the yarn bundle, and unless the Orlon and the cotton fibers are mixed homogeneously, some irregularity of appearance will result that may be unattractive. Small slubs or neps, not particularly noticeable in a yarn dyed to a solid shade, may be quite objectionable in the cross dyed blend. Such a yarn may appear perfectly uniform undyed, and give excellent readings on a Uster Evenness Tester or other testing device.

Finally, the third technical improvement is in piece dyeing techniques for the blend of Orlon and cotton. Heavy and medium shades can now be dyed on blends of Orlon and cotton by a one-bath method. Formerly, these shades had to be dyed by a longer two-bath process, which tied up dyeing equipment, and perhaps reduced production during a busy season. The new one-bath procedure for medium and heavy shades joins a previously established one-bath method for pastels. Thus any shade on fabric of Orlon and cotton can now be piece dyed in a single bath.

BETTER WHITES—Achieving a high degree of fluorescence in white shades on blends of Orlon acrylic fiber and cotton has been made possible by a fiber modification. Orlon Type 72, a fiber having built-in fluorescence, was announced in June of this year. This fiber possesses fluorescence equivalent to that of bleached and white dyed cotton, and of equal importance, the good white is unusually durable. White dyes at best have only moderate fastness to washing on most other fibers, and their lightfastness is usually no better than mediocre, being in the 2½ to 5 hour sunlight range. The fluorescence that is spun into Orlon Type 72 withstands many severe washings with no loss of brightness—in this respect the fastness seems more than sufficient for the life of the garment. Exposures of up to 10 hours in direct Florida sunlight show no appreciable change in the white, and even after 20 hours or more exposure, there is no yellowing and much of the fluorescence remains. This is outstanding durability for a fluorescent white.

Development of the Orlon Type 72 fiber was not in itself sufficient to eliminate problems of bleaching blends of Orlon and cotton. Techniques were needed to whiten the cotton without impairing the good white on the Orlon Type 72. It is well known that acrylic fibers are damaged by alkaline solutions at elevated temperatures and the most widely used and effective methods for bleaching cotton employ alkali and peroxide at elevated temperatures. However, considerable experience has been gained in bleaching cotton in the presence of Orlon Type 42 and Type 25. Modification and improvement of these techniques gave a procedure that was completely satisfactory with blends of Type 72 and cotton. This procedure does not impair the durability of the built-in white on Orlon Type 72.

A two-step method is used. In the first step the cotton is bleached and motes are removed using hydrogen peroxide and sodium silicate (a relatively mild alkali) under carefully controlled conditions of alkalinity and temperature. In the second step the Orlon acrylic fiber is tinted with minute amounts of blue and red dyes, and a fluorescent white dye is applied to the cotton. Again, particular attention must be given the pH of the bath, this time to ensure that efficient application of dyes and tint takes place without yellowing of the Orlon.

A good scour should usually precede bleaching. The duration and conditions of scouring depend on the presence of soil or waxes in the goods. The following is a satisfactory procedure for most fabrics (percentages based on weight of goods):

0.5% Duponol RA surface active agent (anionic detergent)
0.5% tetrasodium pyrophosphate (TSPP)
Run for 20 min. at 140° F.

The cotton is bleached as follows:

7.5 grams per liter Albone 35 hydrogen peroxide
3.5 grams per liter sodium silicate*
(set at pH 9.5 to 10.0)

Run one hour at 160° F. The temperature must not exceed 160° F. and the pH must not go above 10.0. Otherwise the Orlon acrylic fiber may be yellowed. Somewhat higher concentrations of peroxide may be used, if necessary for complete mote removal from the cotton.

The Orlon is tinted and the cotton white dyed as follows:

0.5% Duponol RA surface active agent
0.5% tetrasodium pyrophosphate (TSPP)
0.5% monosodium dihydrogen phosphate
10.0% Glauber's Salt (calcined)
0.25-0.5% Pontamine White BTS
0.0006-0.0008% Latyl Blue BCN
0.0008-0.001% Dekatyl Brilliant Red B

Add chemicals and run cold 10 minutes. Add tints and optical whitener slowly. Then raise

(*Continued on Page* 47)

TOW DYEING

The usual result of an important new technical process is increased volume and profits for the industry to which it applies. The spectacular growth of Tow Dyeing is doing just that for the knitting industry. Spurred on by the versatile possibilities of Tow Dyeing, fashion designers are creating exciting new fashions to capture greater volume for the industry. Jefferies Processors, Inc. is proud that our pioneering efforts in Tow Dyeing have helped to produce this result. We are proud too that our vast experience and leadership in this field enables us to offer you outstanding service, not only in Tow Dyeing, but also in processing piece goods and skeins. If you have a particular problem or need information about Tow Dyeing or any other type of color processing—our technicians will be happy to advise you. It's all part of a pattern of versatility, quality and service . . . cut to *your* measure by Jefferies.

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Dyeing and Wet Finishing Review

Dyeing, Finishing Of Knit Fabrics Of Arnel / Arnel 60

By JACK A. DAYVAULT
Celanese Fibers Company, Division of
Celanese Corporation of America

THE TREMENDOUS growth of the knit fabric industry has been brought about by many factors, an important one of which is new fiber and yarn developments. Arnel is a good example of a fiber which has tailor-made qualities for knits. Indeed, Arnel contributes dimensional stability and shape retention, pill resistance, ease of care properties, and color styling through piece dyeing, to knits when blended with the cellulosics and the acrylics[1]. In addition, Arnel has a soft luxuriant hand and can be readily dyed into almost any combination of shades with the blending fiber.

The range of applications for Arnel in knit fabrics can be extended by Arnel 60, which has approximately twice the tensile strength of regular Arnel[2]. With Arnel 60 much finer yarn counts can be spun (30 to 35/1 in 100 percent) permitting its use in finer gauge fabrics. The dyeing and finishing characteristics of Arnel 60 are essentially the same as regular Arnel.

A measure of the success Arnel has enjoyed in the knit fabrics market may be seen by the variety of blends that will be on the market this fall. They include intimate blends and combinations of Arnel and Arnel 60 with cotton, Corval, Zantrel, Coloray and Orlon. These fabrics are being utilized in sport shirts and dresses. Arnel has also found wide use as a stable backing yarn for knit pile fabrics.

A considerable amount of detailed dyeing work has been carried out on these blends by various commercial dyers and the Dyeing and Finishing Laboratories of Celanese Fibers Company.

The purpose of this paper is to summarize the dyeing and finishing technology for handling blends of Arnel with either cellulosics or acrylic fibers. More detail information will be supplied upon request.

Arnel And Cotton

The laboratory work carried out on cotton blends is discussed in this section; however, it should be noted that this information is usually applicable to blends with the various rayons. Intimate blends of Arnel and Arnel 60 with cotton usually contain 60 to 70 percent of the triacetate fiber.

DYEING—A simple one-bath dyeing procedure employing disperse dyes for the Arnel and aftertreated dyes for the cotton can be used for all shades except black. Blacks are dyed with azoic developed dyes. Dyeing is usually preceded by an alkaline scour with an anionic detergent and TSPP. The buffered peroxide bleach shown below is used to obtain a clean base for light and pastel shades. This bleach will not saponify the Arnel.

TABLE I
DYEING PROCEDURE
FOR ARNEL/COTTON KNITS

1. Load goods on enclosed winch.
2. Scour 30 minutes at 160° F. 2.0 percent Parapon AP and 2.0 percent TSPP. Rinse.
3. Set bath at 11° F. with 2.0 percent Parapon AP and 0.10 percent Sequestrene NA4. (Add 0.25 percent Conco Inhibitor FR for blue shades only.)
4. Add 0.5-2 g/l Marnel 82 for heavy shades.
5. Add dissolved direct dyes and dispersed dyes. Run five minutes.
6. Raise the temperature to 205° F.-212° F. over 30 minutes. Run 15-20 minutes at boil.
7. Shut off steam and add salt in 3-4 portions.
8. Run at boil 30-90 minutes, depending upon depth of shade, before sampling.
9. When on shade, cool bath to 160° F. by running in warm water. Add salt when rinsing in a new bath.
10. Aftertreat with fixative for cotton. Rinse.
11. For heavy shades on Arnel, scour 20 minutes at 130° F. with 1.0 percent Alkanol HCS and 1.0 percent TSPP to remove surface dye.

10% (owf) Hydrogen peroxide (50 percent)
5% (owf) Borax
5% (owf) Disodium phosphate
0.2% (owf) Calcium chloride
1% (owf) Sandopan DTC
Run 45 mins. at 195° F.
(pH 8.5-9.0)

Reserve effect shades are most economically obtained by dyeing the cotton with selected direct dyes. In most cases a light rinse is sufficient to clear the Arnel. It is possible to reserve the cotton if desired by (1) the use of selected disperse dyes, (2) Parapon AP as a dyeing assistant and (3) clearing the cotton with sodium oleate soap flakes and sodium hydrosulfite at 120° F.

Union and cross dyed shades are dyed by the one-bath procedure shown in Table I. Selected aftertreated direct dyes and disperse dyes are listed in reference (1). Accelerants are used for heavy shades on the Arnel. Marnel 82, a butyl benzoate type, gives good results at 0.5-2 g/l concentrations. The accelerant should be added to the dyebath prior to adding the dyes.

One-quarter percent of an inhibitor is used in all dyeings containing blue dispersed dyes in order to inhibit fading caused by ozone. A larger amount of inhibitor is required when nongas fast disperse blues are used.

Arnel can be dyed a developed black which reserves the cotton by using 3.0 percent Eastman Diazo Navy RB, diazotizing cold, neutralizing with sulfamic acid, and developing the shade with 0.5 percent Developer G Supra (phloroglucinol). If a union shade is desired, the cotton can be subsequently dyed with Cuprophenyl Black RL and aftertreated with copper sulfate. Cuprophenyl Black

TABLE II
RESIN FINISHING
ARNEL/COTTON KNIT FABRICS

Dry fill at 70-80 percent wet pick up with
100 gpl Aerotex Resin 23 Special
30 gpl Permel Resin B
3 gpl Buffer DCY
10 gpl Moropol 700
20 gpl Aerotex Accelerator #5*
1 gpl Triton X-100
Dry at 250°F. on loop or Tube-Tex Jet drier.
Cure at 300°F. for 1¾ to two minutes on Tube-Tex drier. (Longer time required for curing in loop drier.)
Steam calender.
*If curing is accomplished at 320°F. or above, Aerotex Accelerator #5 should be replaced by 30 gpl Aerotex Accelerator MX.

TABLE III
RESIN FINISHING
FILAMENT ARNEL/COTTON KNIT FABRICS
50/50 Filament Arnel/Cotton Combination

1. Pad dry (75 percent pick up) with
60 gpl Aerotex Resin 23 Special
12 gpl Accelerator MX
2 gpl Aerotex Buffer DCY
30 gpl Sylmer 54
30 gpl Moropol 700
2. Dry at 220°F.
3. Cure at 300°F. for 2½ minutes.

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RL will dye cotton black and reserve the Arnel. A developed union black can be dyed on both fibers by a procedure given in reference (1).

Resin bonded pigment colors are used in printing Arnel and cotton blends.

BLEACHING — Conventional cotton bleaching on the beck using sodium peroxide or hydrogen peroxide and sodium silicate can be used for whites. Saponification will be negligible under these conditions; however, kier boiling and kier bleaching are not recommended.

If desired, a textone bleach or the previously listed peroxide bleach (run one to two hours) can be utilized to achieve good whites. Optical brighteners can be applied during the peroxide bleach. The cotton brightener must be applied in a new bath if a Textone bleach is used. A typical procedure is:

2. Bleach with five percent Textone, five percent Depco Bleach Assistant, three percent oxalic acid and 0.2 percent Uvitex ERN for one hour at 205-208°F. Rinse well.

3. In a new bath tint cotton with 0.3 percent Tinopal 3BSA and 10 percent Glauber's Salt for 30 mins. at 140°F.

FINISHING—A big advantage of Arnel and cotton blends in knit fabrics, particularly underwear and sleep wear, is that shrinkage in the length direction is approximately half that of 100 percent cotton without resin finishing. Shrinkage of properly resin finished fabrics in these blends is also improved over 100 percent cotton.

For non-resin finished fabrics a cationic softener (one to three percent) is usually applied in the last rinse after dyeing. Monomeric UF and acetal resin finishes commonly used for resin finishing 100 percent cotton blend. Good results have been knits are satisfactory for the obtained with the modified heterocyclic melamine resin, shown in Table II. The resin formulation shown in Table III was developed to improve the sewability of filament Arnel and cotton combinations where excess surface deposition of resin made the fabric subject to needle cutting. Spreader settings at the pad should be set to spread the fabric sufficiently so that curing can be carried out at the desired finished width.

Calendering, whether regular or tensionless, is normally performed with minimum calender roll pressure and full steam.

Arnel And Orlon

ONE BATH PROCESS—A one bath process for dyeing blends of Arnel and Orlon has been developed which is based on the following principles:

1. Use of selected neutral dyeing cationic dyes.
2. Use of a selected anionic surfactant, Igepon T.
3. Control of pH at 6.7-7.0.
4. Separate addition and dilution of cationic and dispersed dyes. Details of how this system was developed and a suggested mechanism of the reaction can be found in reference (1).

Adherence to the above principles is necessary to achieve the best results in dyeing this blend. A detailed procedure is given in Table IV.

EQUIPMENT — The commercial Arnel and Orlon yarns consist of a 50/50 high bulk blend. Yarn dyeing can best be accomplished on submersion type skein dyeing equipment to retain maximum bulk. Dye becks suitable for 100 percent acrylic knits are preferable for dyeing fabrics of this blend.

DYEING—Reserve, union and cross dyed shades can be dyed on this blend. Conventional Orlon dyeing procedures are used for reserve shades with selected cationic dyes listed in reference (1). It is necessary to clear the cationic dye stains from the Arnel by a cold acid chlorine strip to get clear reserves and for maximum lightfastness. This strip consists of five percent (owf) sodium hyprochlorite solution (five percent) and one percent (owf) hydrochloric acid at 75-80°F. followed by an anti-chlor with sodium bisulfite.

Union and cross dyed shades are dyed by the one bath process using selected cationic dyes.

The only retarder required for this process is 10 percent Glauber's Salt for light and pastel shades. A small amount of inhibitor, 0.25 percent Conco inhibitor FR, is added at the end of the dyeing during the cooling cycle to prevent "O" fading. Considerably more inhibitor is required when non-gas fast blues have been used. Cross dyeings with black are best accomplished by a two bath procedure using the less expensive acid dyeing cationic dyes on the Orlon for the black and dyeing the Arnel in a separate bath. Union blacks are dyed by the procedure shown in Table V.

BLEACHING — A Textone bleach with oxalic acid gives the best bleached ground. Optical

(*Continued on Page* 53)

TABLE IV
ONE BATH DYEING PROCEDURE
FOR ARNEL/ORLON

1. Scour fabric 20 minutes at 160°F. with 1.0 percent non-ionic or anionic surfactant and 1.0 percent TSPP. Rinse.
2. In a new bath at 120°F. add 0.5 percent-1.0 percent Igepon T, 1.0 percent monosodium phosphate and 2.0 percent disodium phosphate. Run 5-10 minutes.
3. Dissolve cationic dyes in methyl alcohol and hot water. Add dissolved dyes to bath and run 5-10 minutes.
4. Dissolve and strain disperse dyes. Add dissolved dyes to bath and run five minutes. If required, add 0.5-1.0 gpl Latyl Carrier A.
5. Raise temperature evenly to 180°F. over 30 minutes. Raise temperature evenly from 180°F. to a boil over 30 minutes.
6. Run 60-90 minutes at a boil before sampling.
7. Cool back to 180°F. before making adds.
8. When on shade, cool the bath slowly by radiation to 160°F.
9. Add inhibitor during cooling cycle at 180°-190°F.
10. Gradually cool bath down and rinse with warm and cool water.
11. Scour heavy shades 20 minutes at 130°F. with 1.0 percent non-ionic surfactant. Rinse.
12. Apply in final rinse bath for 20 minutes at 120°F. 0.5 percent-3.0 percent cationic softener. Offload.

TABLE V
DYEING UNION BLACK SHADES
ON ARNEL/ORLON BLENDS

1. Run fabric in bath at 90°F. with 0.5 percent Alkanol HCS for 5-10 minutes.
2. Mix 2.5 percent Naphthol AS-D Supra with 5.0 percent ethyl alcohol. Dissolve 0.65 percent caustic soda with 2.5 percent water. Stir the dissolved caustic into the Naphthol mixture. Let the solution stand for five minutes. Dilute with hot water. (The solution should be a clear greenish yellow liquid.)
3. Strain the Naphthol solution into the dyebath. Run 10 minutes.
4. Add 3.0 percent acetic acid diluted with water to the dyebath. Run five minutes. (pH 4.0-5.0) A fine milky white precipitate is formed. Run 10 minutes.
5. Mix 4.0 percent Latyl Diazo Black B with 8.0 percent Compound 8S. Dilute with hot water. Strain. Add to dyebath. A purlish brown color results.
6. Heat to 208-212°F. over 30 minutes. Run 90 minutes at 208-212°F.
7. Overflow rinse with warm water to 140°F. Then rinse well with cold water.
8. In a new bath diazotize with 5.0 percent sodium nitrite and 7.5 percent formic acid (conc.). Run minutes at 77-86°F. Raise to 140°F. over 15 minutes. Run 15 minutes at 140°F. Rinse well.
9. In a new bath, complete development of Arnel and top the Orlon with:

0.50 percent Sevron Blue 5G
0.15 percent Sevron Red B
0.50 percent Igepon T
1.00 percent Monosodium phosphate
2.00 percent Disodium phosphate

10. Raise to 180°F. over 30 minutes. Raise from 180°F. to a boil over 30 minutes. Run 60 minutes and sample.
11. When on shade, cool by radiation to 160°F. Rinse overflow.
12. Scour at 160°F. with 2.0% Alkanol HCS and 2.0% TSPP.

Note: All percentages based on weight of fabrics.

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Dyestuff Developments

Procion Fiber Reactive Dyes For Cotton, Rayon Knits

WHEN one considers that Procion dyes have been commercially available for less than five years, the impact they have had on the textile industry—from the designer's board to the store window—has been without precedent in the field of dye technology. Unusual color combinations, brilliance and clarity with excellent all-round fastness, and simplified application procedures have sparked the imaginations of dyer and converter, designer and buyer.

Of special interest to the dyer of cotton and rayon knitgoods and knitting yarns is the comparative ease with which the Procion dyes can be applied by beck and package dyeing procedures, with the reduction and often elimination of difficulties encountered using conventional classes of dyestuff. At the same time, shades of excellent wet fastness and good to very good light fastness are obtained. The value of this ease of application coupled with excellent wet fastness is well demonstrated by the extent to which dyers of knitting yarns and knitted piece goods have adopted Procion dyes.

As a range, the Procion normal or cold dyeing brands are generally preferred over the Procion "H" or "hot" types for beck dyeing. The former are more reactive, require less salt and alkali for exhaustion and fixation, and can be applied at room temperature. Both types, however, produce shades of high wet and light fastness. Using either type, it is possible to produce hues of any degree of intensity in almost all color areas. In fact, from the two ranges of Procion dyes, it is possible to produce a wider range of shades than from any other single range of dyes for cellulose. At the present time there are 33 Procion dyes, 14 of which are "cold dyeing." Intermixing of the two types is not recommended and, indeed, is not necessary in batchwise dyeing.

Application To Cotton Knitting Yarns And Knitwear

The predissolved dye is added to the beck and dyeing is started at room temperature. During the first 15-30 minutes common or Glauber's salt is added to promote exhaustion. Then, caustic soda, trisodium phosphate or soda ash is added to effect fixation of the reactive dye to the cellulose molecule, and the goods are run for a further 1-1½ hours, without heat. After dyeing, the material is rinsed in cold water, "soaped" at or near the boil, rinsed and dried.

Dyestuff may be added during the alkaline fixation stage for shading purposes. Procion dyes can be stripped from the goods if necessary, the degree of shade reduction depending on the extent to which the dyeing cycle has progressed, and on the dyes which are used.

Typical Formulations

A FULL, BRIGHT RED SHADE ON COTTON. The goods are boiled out and rinsed neutral and free from hypochlorite or peroxygen compounds.

Volume ratio 20 to 25:1
Set the dyebath with:
2.5% Procion Brilliant Red 8BS
2.5% Procion Brilliant Orange 2RS

at 80-100° F., adding predissolved dyestuff in two equal predissolved portions at intervals of 10 minutes. Add 4-8 ozs. per gallon common salt over a 15-30 minute period, and run an additional 15-30 minutes.

Then to the dye liquor add nine per cent soda ash, predissolved, over a period of 10 minutes and continue dyeing, preferably at 85-95° F., for a period of 45-60 minutes.

Rinse in water, 'soap" at the boil with 0.5 to 1% Synthrapol SP; rinse and dry.

AN OLD GOLD SHADE ON COTTON YARN; PACKAGE DYEING. Boil out the goods and rinse thoroughly to bring the cotton to pH 6-8; finish in cold water. The dye formulation is as follows:

Procion Yellow GRS	1.40%
Procion Brilliant Red 8BS	0.12%
Procion Blue 3RS	0.10%

Dye at a volume ratio of 10:1 and a temperature of 90-100° F. Set the dye bath with water and add predissolved dyestuff in two or three portions over a period of 20 minutes. Run 10 minutes and add a total of 2-3 ozs. per gallon of calcined Glauber's salt (predissolved) in three additions over 30 minutes, holding the temperature within a 90-100° F. range.

Then predissolve soda ash in water to give a final concentration of 4.8 per cent on the weight of goods and add the soda ash liquor in two equal portions over 10 minutes.

Continue dyeing for a further 40-50 minutes; finally, rinse in water, soap at the boil with 0.5-1 percent Synthrapol SP; rinse and dry.

BRIGHT TURQUOISE BLUE SHADE ON COTTON. Turquoise and Kelly green shades require the use of Procion Brilliant Blue H7GS, a hot dyeing type. The dyeing temperature must be brought to 185° F. during the first 30 minutes, and common salt is used as the dye bath assistant. Fixation is accomplished using caustic soda, trisodium phosphate, or a mixture of soda ash with caustic soda.

The goods are boiled out and rinsed neutral, and free from hypochlorite or peroxygen compounds. Set the dyebath with two percent Procion Brilliant Blue H7GS at 105-120° F. and dye at this temperature for 15 minutes.

Add to the dyebath 4-8 ozs. per gallon common salt over a period of 30 minutes at 120° F.; run an additional 15 minutes and then add to the dye bath 0.3 ozs. per gallon of caustic soda (calculated as 100 percent caustic soda), predissolved and added over a period of 10 minutes at 120° F. Run the goods 10 minutes, raise the temperature to 185° F. over 10-15 minutes and continue dyeing for a further 30 minutes.

Rinse thoroughly, and soap at the boil with 0.5-1 per cent Synthrapol SP; rinse and dry.

Procion Dyes Compared With Other Classes

In comparing Procion dyes with the conventional types heretofore normally used for knitwear dyeing, the following points should be considered:

- Simplicity of application.
- Fastness.
- Shade range.
- Time of dyeing.
- Over-all costs.
- Quality of resultant dyeings.

DIAZOTIZED AND DEVELOPED DYESTUFFS. The wet fastness of diazotized and developed dyestuffs is not as good as the Procions, particularly where repeated washing or severe washing is concerned. The light fastness of the "D and D" dyes varies with the dye used, but generally is inferior to that of the Procion dyes.

The main limitation of the diazotized and developed class of dye is the limited shade range available, a restriction which does not apply to Procion dyes.

As far as costs are concerned, it has been established that in the pale-to-medium shade range the savings in steam, time and labor with the Procion dyes will generally offset any differences in individual dyestuffs cost. In the darker shades, Procion dyes will give a fastness previously obtainable only with vat or azoic dyes, which generally are more expensive than Procion dyes to apply on the beck and on packages.

Diazotized and developed dyeings require three separate operations—dyeings, diazotization, and development — with appropriate rinses, while Procion dyes are applied and fixed in the same bath. Reproducibility of shade is easier with Procion dyes than with diazotized and developed dyes.

NAPHTHOL DYESTUFFS. The knitgoods dyer is well aware of the difficulties which can be encountered in attempting to produce level dyeings using naphthols, especially on tubular knitted yardgoods. The cold dyeing Procions are particularly suitable in this respect and are considerably easier to apply.

Naphthol dyeings, as a rule, are very fast to washing and reasonably fast to light. However, poor rubbing fastness can be associated with even the fastest naphthols, whereas Procion dyeings have very good to ex-

(*Continued on Page* 57)

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Textile Auxiliaries

Advances In Silicone Applications To Knit Goods

By F. L. DENNETT
Fiber Treatment Section, Production Engeering Labs
Dow Chemical Corporation

SILICONES as fabric finishes have become standard on a majority of woolen and synthetic fiber fabrics over the past several years. Probably one of the more important contributions that silicones have made to the textile industry has been as special finishes for some of the newer developments in the knitwear field especially as a finish for worsted jersey, high pile synthetic fiber fabric and knitted cloth of wool and acrylic fiber blends and even fur fiber blends.

The following general characteristics of silicone finishes make them of special interest in the knitwear field:

- Ease of plant application by padding, exhaustion or spraying.
- Soft cashmere-like hand.
- Shape retention in sweaters and similar garments.
- Water repellency.
- Resistance to water-borne spots and stains.
- Excellent fastness to washing and dry cleaning.
- Non-yellowing.
- Odorless.
- Improved physical properties of many fabrics such as tear strength and abrasion resistance.
- Improved sewability.

SILICONES FOR WORSTED JERSEY—The first Dow Corning product to be used in knitwear was designated as ET-5147 and was designed to be applied to worsted jersey or other wool fabrics by exhaustion methods. This system of application has advantages in that it can be easily carried out in the older woolen mills or even by a sweater finisher, since dye becks or sweater dyeing machines are excellent for this purpose. For best results with this product the fabric to be treated should be all-wool or other animal fiber or blends with less than 15 percent synthetic fiber. The bath should be made up with a liquor-to-fabric ratio between 15 to 1 and 30 to 1. For best operating conditions the pH of the fabric should be around 5.

Maximum results are obtained when the bath is based on 5.0 percent of ET-5147 on the fabric. The goods are allowed to run about 10 minutes in the bath containing the silicone, then the silicone catalyst is added which results in complete exhaustion in about twenty minutes additional running time. Maximum properties of the silicone are developed by drying and curing the treated fabric, without rinsing, at temperatures between 200 and 220°F.

The same types of fabrics may be treated using ET-5157 in a padding operation, with a four to five percent bath as received, and the same curing conditions as for the ET-5147.

SYNTHETIC BLENDS — Dow Corning ET-5317 is used on synthetics, cottons and blends of synthetics with wools where wool is less than 85 percent of the total fiber content. This product is applied by padding followed by curing for 10 minutes at 200°F. or approximately three minutes at 300°F.

A companion product to ET-5317 is ET-5297 which can be applied to virtually all fibers and combination of fibers using the exhausting technique. This product enhances the characteristics of fabrics knit from nylon, cotton, Orlon, Arnel, Acrilan, viscose and Bemberg.

Maximum softening is an outstanding characteristic when minimum quantities are applied. When 1.0 to 1.5 percent solids is applied, followed by a short curing cycle at 300°F., durable spot and stain resistance is obtained in addition to the unique softening action described above.

PILE FABRIC FINISH — Dow Corning ET-5167 has been especially prepared for synthetic, fur-like fabrics prepared from Orlon, Acrilan or Darvan. This product produces a smooth and luxurious handle, water repellency, spot and stain resistance and some gloss improvement on such fabrics. Padding, brushing or spraying techniques may be used for application. In any method of application the fiber must be saturated to a depth of at least one quarter of an inch from the tips. Final finishing operations such as shearing or brushing may be carried out after the silicone has been applied and cured.

Many special fabrics have been successfully treated with the silicones mentioned above. Blends of fur fiber with wool, Zefran and wool, Zefran and polyester, Dynel and wool are just a few of the many fabrics which owe some of their luxury characteristics to silicones.

Successful results have been obtained by spraying small amounts of silicone emulsion onto the fiber at the picker and then applying an additional treatment during the routine finishing steps. This system allows the knitter to benefit from the lubricating properties of the silicones during the fabric preparation processer.

FOAM-LAMINATED KNIT FABRICS—Some of the newer combinations of knit fabrics and foam insulation are also being successfully treated. Padding the already aminated fabric with the silicone appears to be an acceptable procedure. This system is easy to handle and gives no difficulties in drying and curing when a low curing silicone is used. The treatment imparts the usual silicone finish properties to the fabric face and also imparts water resistance to the foam without impairing moisture vapor transmission. The foam backing is also lubricated which should result in easier handling and sewing at the garment manufacturing plant.

ANTISTATICS — Considerable work has been done in the area of antistatics which can be applied to fibers along with the silicone finishes of interest to knitters. Using ET-5317 the following agents have been found to be compatible, and can be used in bath concentrations of one to two percent with a resultant spray rating of 90 or better.

- Velvapex 8121-G, Apex Chemical
- Emkastat NS, Emkay Chemical
- Vikin D-20, Vikon Chemical
- Zelec DP, Du Pont Company
- Nopco 2152, Nopco Chemical

This list is by no means complete but can be used as a guide when fibers are employed that need the help of an antistat for proper handling.

The slogan "A Finish for every Fiber" applies to the use of silicones in the knitwear field as well as in woven fabrics. The individual and collective benefits of silicone finishes on fabrics in any of the variety of fiber combinations on which they are applicable have led the way in many successful textile product developments, including knitwear.

Furthermore, if these silicone finishes are applied to meet Dow Corning standards of performance in laundering and dry cleaning, they are granted the use of the Syl-mer label which has become well known and accepted at all levels of the textile industry, the apparel manufacturing and retail trade, and the general public.

A staff of trained technicians is constantly working to improve and develop new silicone finishes, or to give aid in application of these products to new fiber combinations.

Synthetic Tow Crimp Modified By Turbo

PHILADELPHIA, Pa. — Turbo Machine Co., of Lansdale, Pa., has announced modifications in its Model DC crimper for synthetic tow to produce a better crimp.

Air cylinders on each side of the delivery gate have been added for proper fiber infeed. A third air cylinder controls the pressure in the stuffing box for the required crimp. An adjustable stop holds minimum and maximum roll openings.

Crimper rolls are four inches in diameter. They are available in widths from ¼ inch to six inches. The complete unit adjusts to accommodate any roll width.

Tow is fed into the crimper at a 45 degree angle directly from a lead-on roll. Double and triple tow can be run in continuous operation.

FOR WOOL-LIKE LOFT IN Sayelle* (Orlon 21)

HAVE NICETOWN DYE YOUR YARN

The combination of Nicetown's fifty years experience in dyeing animal fibers, and its work with synthetics, assures you a true wool-like loft for your fine Sayelle yarns.

When Nicetown dyes Sayelle in the skein or piece, you are certain of the quality work you must have for today's high styled garments.

Why not assure this wool-like loft and high quality work for your Sayelle and other synthetic and natural yarns?

Just phone JEfferson 5-4050 today to have one of our field representatives — incidentally all men with dye house experience — call and discuss your needs.

METHODS USED	FIBRES PROCESSED
Piece dyeing	Acrilan*
Top dyeing	Orlon*
Raw Stock dyeing	Dacron*
Skein dyeing	Sayelle*
Moth proofing	Cashmere
Dylan process	Nylon
Dyeing and packaging of hand knit yarn	Wool
	Worsted
	Dynel*
	Vicara*

*Registered trademark.

NICETOWN DYE WORKS

Orthodox and Belgrade Sts., Phila. 37, Pa. Jefferson 5-4050-4051-4052

Pierre de St. Phalle, *President* Ellen G. Wall, *Vice-President* Paul F. Beener, *Treasurer* Harold L. Dungan, *Secretary*

Dyeing and Finishing Review

Dyestuff And Wet Processing Developments In Euro

MANCHESTER, England—In Europe, and particularly in Britain where the percentage of wool used by knitters has been so much higher than in the U. S. A., dyeing and wet processing developments over the past year have indicated the growing interest the knitters are taking now in synthetic fibers. The development of the Procinyl range of dyestuffs by Imperial Chemical Industries Ltd., marked a milestone in the dyeing of nylon. Nylon can be dyed with the same dyes as are used on wool because like the natural fiber, nylon contains basic groups which can combine chemically with the acidic wool dyes. The snag comes in trying to match the color through succeeding batches of nylon; there are usually some variations from batch to batch resulting from slight differences in polymer or from subsequent heat treatments in crimp setting and other processing. These variations often produce differences in dyeing affinities.

Disperse dyes, originally developed for cellulose acetate fibers, could be used instead but the dye is retained in this case by essentially physical forces and fastness obtained with, in particular, the dark shades is not always satisfactory.

More Uniform

Thus the advent of I. C. I.'s Procinyl dyes, which are virtually disperse dyes that can, by rendering the bath alkaline, be made to combine chemically with the nylon, revolutionized the dyeing of polyamide fibers in Britain. The Procinyl dyes are absorbed by physical forces and are thus not affected by variations in the chemistry of different batches of the fiber. However they are given the fastness of acid dyes by their chemical union with the nylon.

But behaving as disperse dyes, the Procinyl dyes are not satisfactory with fibers like Orlon and Courtelle, although good dyeings can be obtained on Acrilan. To ensure more level results on acrylic fibers such as Courtelle, Orlon, Acrilan 16, and the German fiber, Dralon, I. C. I. has developed an auxiliary product known as Dispersol AFB.

The use of basic dyes on acrylic fibers has been becoming popular because these dyestuffs can produce a wide range of fast shades at all depths, but trouble has arisen in obtaining level dyeings. Precise control of pH and temperature is not always possible; neither is the expedient of adding cationic restraining agents. I. C. I.'s Dispersol AFB acts by restraining the initial rapid absorption of the basic dye and allows the temperature to be raised quickly to boiling point and at the same time produces uniform uptake of the dyestuff by the fiber. Supplied in liquid form, the auxiliary is simply added to the cold bath with the pH-controlling chemicals immediately before the dyestuff is added. The manufacturers recommend the use of 0.5 part of the product to 1,000 part of the dye liquor. The fastness of the dyeing is unaffected, although slight difference may be caused in shades with some dyes; but this is regarded as unimportant and can be overcome.

Practically all the acrylic fiber dyed in yarn form in Britain at the present consists of high-bulk types produced on the Turbo Stapler, on the Pacific Converter fitted with a heat stretch unit, or by blending regular with high-shrink staple on a card for spinning on the cotton system.

Package Dyeing

One recent modification to allow such yarns to be dyed in package form and to allow relaxation to take place during the dyeing process involves the winding of the unrelaxed yarn onto a mandrel about three inches in diameter on which has been placed a ½ inch thick sheet of foamed polyurethane. Packages are wound on a six inch traverse with about 14 ounces per package, then transfered to ordinary cheese dyeing spindles. The foamed sheet core supports the inner layers of yarn during the relaxation stage. Although this process does give level dyeing, it produces a leaner yarn than hank dyeing.

It is reported that a unit developed by the French company, Clermont Bonte S. A., of Lille, produces exellent results and great efficiency by using the moving hank through a static bath technique. The unit is called the Rotamatus, but so far not much information is available about it.

Skein Dyeing Unit

However, as far as dyeing equipment is concerned, undoubtedly the piece of equipment which has received the most favourable comment over the past year has been the Plus-flo Skein dyeing unit developed by Freeman, Taylor Machines Ltd., of Syston, England. In this unit (initially described in TED OUTERWEAR TIMES, ber 12, 1959) the sep skein cage box is positione trally, giving a clear ar space between the box and of the tank. Thus it has possible to obtain a four weir with a total length of feet for the 200 to 300 lb. city unit, this being about times normal weir length ensuring a uniform low ve yet large volume flow. plates of special V-shaped ted design at top and bott the box produce further proved balancing of the The result is said to be a fl over 4 gallons per lb. of ma per minute, a flow that smooth and even that milli completely eliminated. Tak of dye is said to be remar even without revolving ta

The machine's open d hank pole frame is easily loa and this operation can be ried out from both sides a same time. This feature bines with the absence of clamping nuts to make rapi loading easier.

Hanks are carried on u and lower sets of poles, gered in such a way that maximum yarn can be pr sed; the flow does not imp directly onto the yarn and of pole congestion is cut. compact cage has a pole s of 55½ feet and allied with annular flow chamber resul an extremely compact unit quiring a comparatively s amount of dye liquor for amount of yarn being proces Careful instrumentation of unit by its designers facili the achievement of precise peat conditions. According one company spokesman, unit provides perfect level with pre-metallised and neutral dyes. A ten-minute mersion of wool, for exam results in uniform staining. dyed material leaves the un perfect condition for wind and three or even four bat a day can be processed. unit can be cheaply converte dye materials in cheese form loose form, or as worsted top cans.

The Procion/alkali mixer, developed by Dyestuffs Division, Imperial Chemical Industries, Ltd.

New SANDOZ Foron® dyes up-grade fastness on polyester fibers

For an outstanding improvement in color fastness on polyester fibers, try the new SANDOZ Foron ultra-disperse dyes. Popular shades on these fibers can be matched now with available Foron dyes, and new dyes are being added rapidly.

SANDOZ Foron dyes have high affinity for polyester fibers in dyeing and printing, and provide excellent light fastness, wet fastness, and resistance to abrasion.

Recommended for coloring 100% polyester fibers, blends of polyesters with cotton or viscose rayon, and blends of polyester and wool. For a complete exposition of what these new dyes can do for you, call in a SANDOZ representative.

SANDOZ, INC., 61-63 Van Dam Street, New York 13, New York. ALgonquin 5-1700.

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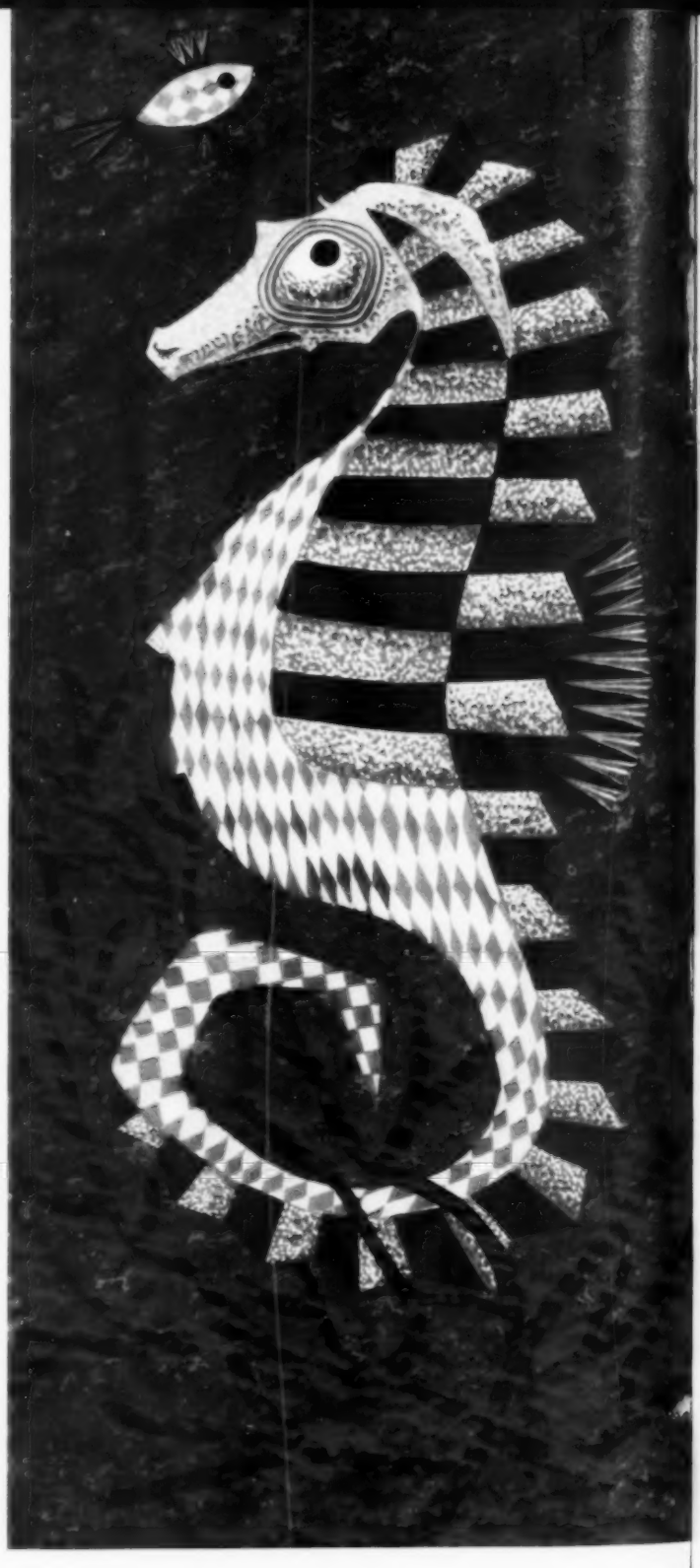

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

An interesting device which has been developed by I. C. I. Dyestuffs Division and which is now being made for them under license by the Horsfall Engineering Co. Ltd., Oldham, England, is the Procion/Alkali Mixer. Some of the most important methods of applying reactive dyestuffs to cellulosic piece goods involve an initial padding. The mechanism of dyeing cellulose with a reactive dye involves a chemical reaction occuring between the reactive chlorine atoms in the dye molecule and the hydroxyl groups in the cellulose. When the system is made alkaline the dyes react preferentially with the cellulose hydroxyl groups rather than with the hydroxyl groups of the water. Nevertheless a fair percentage of coloring matter is inactivated and lost by hydrolysis with water. When double padding (padding of the dye solution followed by an alkali padding) is used losses by hydrolysis are automatically minimized as the reactive dye is exhausted onto the cellulose before it has reacted with the alkali needed to effect the development. However, single padding methods are practical provided precautions are taken to ensure that the dye/alkali padding liquor is not allowed to stand for too long before being padded onto the fabric. The alkali used varies according to the dyeing method selected, but usually either sodium bicarbonate, sodium carbonate, sodium metasilicate or caustic soda is used. Dye solution and alkali solution are prepared separately and mixed in the correct ratio as late as possible before the padding.

Obviously, a continuous process of mixing and padding would be the most efficient.

Unit Described

The need for a simple, automatic pre-mixing device to permit such a system has been met by the I.C.I. Dyestuffs technicians. The mixer is suitable for fabric running speeds up to the equivalent of four gallons of pad liquor per minute. The fully automatic device actually gives intermittent mixing and feeding of the solution but as the amount fed to the mixing zone is small compared with the volume of the pad trough, the method is virtually a continuous feed. The device works on the principle of a container which tips as soon as it is filled to a set level.

Fleissner und Sohn, Germany, has recently developed a method for washing or dyeing loose and heavy material in which a drum with a sieve jacket is mounted inside a container. The drum is positioned horizontally with two conveyer rollers above it. A conveyer belt, moving at the same speed the drum rotates, moves up to the first of the top rollers and deposits the material to be processed onto the outside of the washing drum. The drum transports the material down into the container and back up to deposit it onto a second conveyer belt moving round the second top roller.

In the container, the washing liquid is fed in by a series of pipes, passes uniformly through the material and sieve surface of the drum and out through an exit aperture in the side of the drum and connected to a suction pump.

So far no details have been released about any commercial unit employing this technique.

Fluid Bed System

It has been discovered by engineers at the British Rayon Research Association that fluid bed units may be used to fix a variety of dyestuffs to synthetic fibers by a variation of the Thermosol process, or to fix reactive dyes to cellulosic fibers by the pad heat-fix method, both these techniques being carried out as continuous processes. The Procion cold dyeing range is the easiest to apply, needing shorter fixation times and weaker alkali than other types of reactive dyes.

Advantages of the fluid bed unit in a dyeing process are that it offers a continuous process, that it is compact, it heats fabric quickly and evenly to give level dyeings, it is versatile, and with the Thermosol process the predrying stage can be cut out.

A full-width double-pass fluid bed unit has been constructed and work is proceeding to fit it into a continuous dyeing system. Unfortunately, as far as knitted fabrics are concerned the drawback comes in the feed, where a certain amount of tension has to be maintained to take the fabric through the bed quickly. Just how progress will be affected by the recently announced plans for amalgamation with the British Cotton Industry Research Association's Shirley Institute is not clear. (Recently it was announced that the Geigy company is to take over the B.R.R.A. laboratories at Heald Green, Manchester, when they become empty.)

A Schreiner calender for processing nylon tricot fabrics up to 122 inches wide has recently been built by Sir James Farmer Norton and Co. Ltd., England, and it is said to be the largest in the world. Fabricated steel frames replace the conventional cast-iron frames, giving improved strength and better appearance. Self-aligning spherical roller bearings are used on both top and bottom rollers and these are pressure lubricated by a forced feed pump with an oil cooling device in the system. Self-sealing and quickly detachable couplings are fitted in the oil lubrication line for rapid bowl removal. One operative is sufficient to control the unit during operation.

A stenter in which the fabric is floated between opposing jets of air coming from upper and lower nozzles is now being marketed by the German company, Trockentechnik Kurt Bruckner K.G., of Stuttgart. It is said that this technique avoids stretching or distorting the most delicate cloths and is specially suitable for warp knitted fabrics. An electrical control device keeps the chosen temperature constant between $\pm 1^{\circ}$ C. Pin, clip or combined pin and clip types are available.

Facilities for reproducing heat-setting conditions have been paid special attention by the designers of the A.V.P. Autoclave built by Chaudronnerie Marion, of Lyons, France. Conventional in principle of operation, the unit is basically a horizontal, cylindrical chamber capable of withstanding a vacuum of 74 cm. of mercury and a pressure of five atmospheres. Patented innovations include a quick opening and closing device and a double action seal. A water ring type vacuum pump is fitted to produce vacua up to 73 cm. of mercury. At such negative pressures the few remaining molecules which might cause oxidisation are negligible and complete peneration of the yarn is ensured. The makers believe that saturated steam is the only source of
stable enough for this ty
equipment, and to over
several difficulties which
arise with a source on the
itself they stipulate that an
side source of steam mus
used. Special precautions
taken to control the increa
heat when the steam is inj
into the vacuum; the stea
condensed on the inside o
shell before reaching the
until a working temperatu
reached. A cycle and tem
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porates a graph on which
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clave. The electronic opera
selector works on the same
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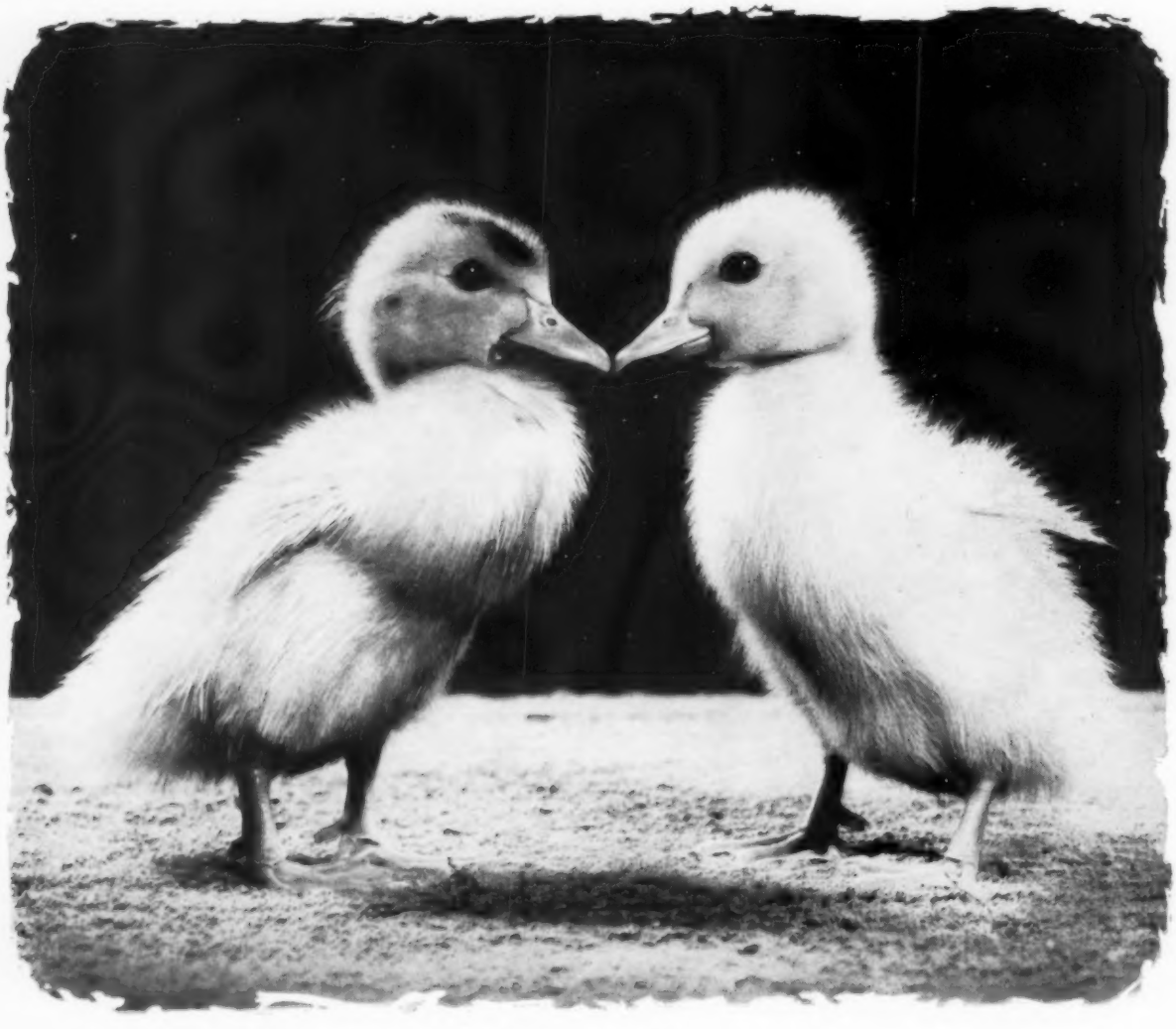
which several columns are p
ed to correspond to var
operations—vacuum, releas
vacuum, steaming, draining,
so on. The start, duration,
end of all these operations
be governed by drawing
on these columns. Indivi
feelers read the ink lines, tr
mitting the necessary data
the appropriate controls.
control system is in turn lin
to a recording device wh
makes records for future re
ence.

Thermo Setting Machine

An improved version of
Andrew Autosetter has been
troduced by the Andrew En
eering & Development Co. L
England. This compact unit
a rectangular autoclave to al
full use of the inner space
steaming. It has a sliding do
with clamping screws to k
it watertight and leakpr
against pressure or vacu
Two sets of trays contained
holding frames facilitate
loading and unloading. Once
sequence of operations has b
set the operative presses
starter button and the cycle
automatically completed. A s
ies of dials and buttons indica
which stage the cycle has rea
ed. A switch on the cont
panel permits the selection
either a single or double cyc
The pump evaporates air fr
the steaming chamber up to
inches Hg in 90 seconds. W

(*Continued on Page* 55)

another significant technical advance — from Keystone, of course!



MATCH YOUR *fur blends* TO THEIR MATES

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Strike a more resounding sales note with fur blends that meet their match mates in complete color accord! Keystone's new fur blend dyeing process gives maximum loft and hand. Write, phone or send samples for processing . . . your inquiry will get fast, personal attention.

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color excellence

MORGAN

The laboratory flasks are symbolic. To Morgan, leader in dyeservice progress, they stand for never-ending research — which we at Morgan regard with utmost reverence. With new fibers and new methods daily presenting new and complex problems, only continuing study and experiment can provide the answers when needed.

MORGAN DYED

Through Service We Grow

MORGAN DYEING AND BLEACHING CO., INC.
ROCHELLE, ILLINOIS
SKEIN DYEING • PACKAGE DYEING • RAW STOCK DYEING • TOP DYEING • TOW DYEING

MORGAN

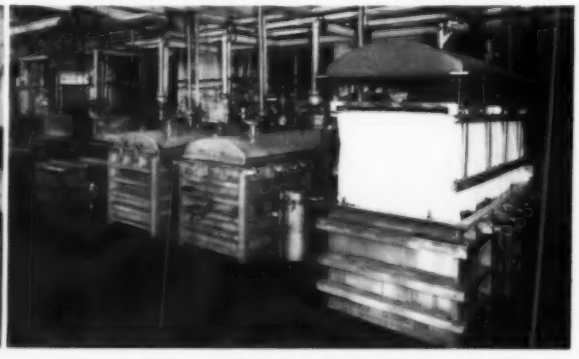
...has the know-how

THE MORGAN LABORATORY is, we believe, second to none in the industry. Here our color research is done, new formulas worked out, old ones rechecked. Here, methods and procedures are subjected to careful testing on small scale equipment. No effort or expense has been spared to give the skilled Morgan chemists the finest tools of their trade.

QUALITY CONTROL in Morgan Dyeing consists of many things. Important, for example, is this wide array of dye-stuff and chemical samples; the delicate precision scales for weight measurements; hand operated winding frame. Equally important are shelves of reference volumes and (not shown) files of customer records to assure accuracy of reorders.

...and the facilities

HUGE PACKAGE DYEING KETTLES at Morgan turn out millions of pounds of cost saving package-dyed yarns every year. Thanks to special Morgan-developed techniques, even Turbo Orlon and Hi-Bulk Orlon are now being package-dyed successfully, in addition to quantities of regular Orlon and other fibers.



THE MORGAN SKEIN DYEING DEPARTMENT includes this battery of highly specialized Scholl Tanks. This most advanced type of skein dyeing equipment known to the industry dyes even Hi-Bulk Orlon under precisely regulated temperature and pressure, yielding true color without sacrifice of hand or dimension.

...to serve you best

CAREFUL HANDLING OF EVERY ORDER extends beyond the mere processing of fibers and yarns in the dye tanks. From the moment your order is placed until it is delivered, you are assured of conscientious attention to detail. Above, in the Morgan Shipping Room, meticulous last-minute checks and counter-checks are made before your order leaves our door.

WAREHOUSING AND DISPATCH are vital factors to Morgan customer service. Recent additions to our warehousing and shipping facilities help to speed orders on their way without costly delays. Railway, trucking and air transportation work together to assure prompt delivery. Above, a railway freight car loads at a Morgan shipping dock.

Through Science we grow

MORGAN DYEING & BLEACHING CO., INC. • ROCHELLE, ILLINOIS

SKEIN DYEING • PACKAGE DYEING • RAW STOCK DYEING • PIECE DYEING • PRINTING

Finishing Equipment Developments

Fleissner Introduces Dryer For Extra-Wide Fabrics

A NEW twin perforated drum dryer for knitted fabrics in uncertain widths has been developed by Fleissner, the prominent German textile equipment manufacturers. The Fleissner line is built, serviced and sold in this country by Saco Lowell Shops. Actually, Fleissner has perfected two new units—the Fleissner suction jet dryer and the Fleissner large fabric width dryer with direct ventilation and short air circulation. Both are an outcome of the company's standard drum dryer.

The suction jet dryer, for example, in comparison to the conventional model, turns over twice the amount of air. This has been achieved by fitting the drums, which have been arranged in a series on both sides, with ventilators. The latter operate according to the tandem principle; 1,880 mm. was determined as the appropriate diameter for the drums in order to give them the highest possible drying capacity. In this way the size of the machine has been kept relatively short.

The suction jet dryer provides even distribution of air over the fabric. It has the additional advantage of handling narrow fabric widths if plant requirements should make this necessary. The sketch in Figure 1 shows the machine's method of operation.

The Fleissner large fabric width dryer with direct ventilation and short air circulation is illustrated in Figures 2 and 3. This unit is hardly wider than its actual working width, achieved by distributing the ventilators over the entire working width above and below the drums. The path of the air streams is thus very short. The heating elements and the interior of the drums are readily accessible.

Since the inside of the chamber is sufficiently large to accommodate a heating surface corresponding with the size of the chamber, the machine can also be used very advantageously for fabric setting. The influences of the high temperatures required for this process have been circumvented by fitting all drum and ventilator bearings outside the dryer.

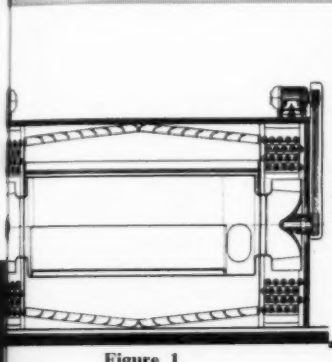


Figure 1

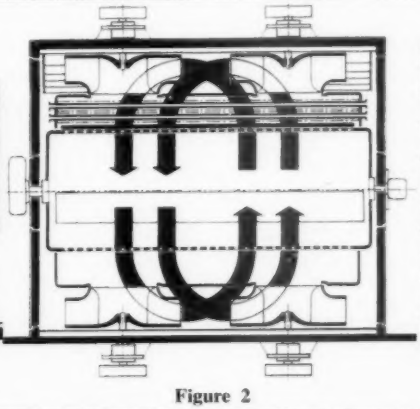


Figure 2

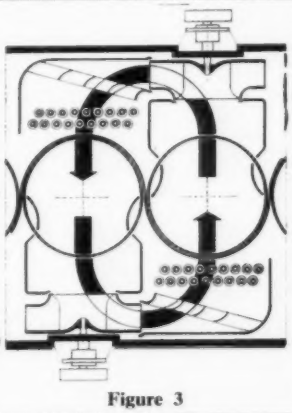


Figure 3

SUN AND FUN FOR SIXTY ONE

Our collection of resort and spring knitwear of real distinction is now completed.

New yarns, new fabrics, new designs await the approval of the outstanding men's knitwear distributors from Coast to Coast.

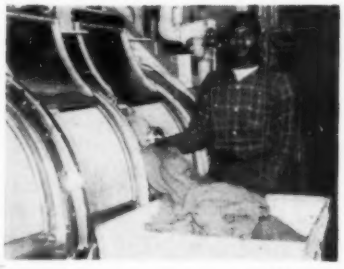
SHOWN BY APPOINTMENT ONLY

The Lion Knitting Mills Co.

3256 West 25th Street ■ Cleveland, Ohio

Designers and Creators of High Quality Sweaters and Knitted Shirts for Men

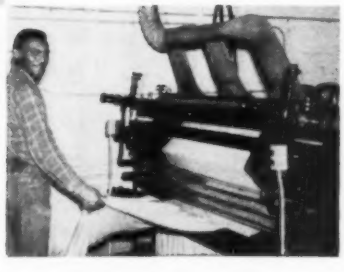
what you should know about the fastest growing knit goods processors...



WASHING

EXTRACTING

SHEARING



A little over a year ago METROPOLITAN was just an idea—a conviction that there was a place in this industry for a new organization willing to work just a little harder than most to serve its customers.

It takes "some doing" to do this in an industry where quality, service and fast delivery is a universal slogan. . . . But we purchased a plant, added facilities, and METROPOLITAN was on its way!

Starting from scratch in a highly competitive industry, our sales have risen rapidly and steadily. The record of our first full year suggests our idea was sound.

With extensive modernization of production methods and facilities, the METROPOLITAN management team of Sam Lefferts and Harry Warner is able to provide more complete and better service.

We know our growth, past and future, depends upon the goodwill of a growing number of customers, and we are resolved to earn this goodwill by the consistent quality of the work we do, and by an extra measure of service.

METROPOLITAN KNIT GOODS PROCESSORS, INC.

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METROPOLITAN FINISHING CORP.

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College Shops' Origin

Reveal Rich Retail Market In Special Campus Styles

August doldrums in the retail merchandising markets turned into unexpected pots of golds with the discovery of the college girl as a potential consumer.

Special college shops featured in most department stores cater to this eager and active group. Late July openings are scheduled with selling running briskly through the remaining summer months well up until the time campus doors swing open.

The popularity of the sweater for college fashion has been guaranteed ever since Peck & Peck introduced the classic cashmere sweater set in the early Twenties. A phenomenal growth in sales volume and style variety has taken place. It has now reached the point where few college girls would any more think of returning to campus without a fair-sized sweater wardrobe for all occasions from football games to classes to teas than they would think of coming without books.

Sweater Variations

Variations on the sweater theme fill a large portion of college shops. Bulkies opened up another area of selling a few years ago and the discovery of the practicality of mix matches and coordinates has further expanded merchandising potentials. With this season's emphasis on knits for all types of clothing, college shops feature knitted goods in almost every nook and cranny of their department up to and sometimes even including formal evening wear.

The teenage girl who, surveys have shown, usually comes from a richer than average family due to her father's peak earning capacity at this time, generally has more money at her wardrobe disposal than members of other consumer groups. A definite increase in fashion consciousness in this age group has also encouraged production of clothes tailored to the demands of active and casual campus living. Both factors are encouraging to a retailer eyeing the collegiate market.

It would seem, however, that collegiate styles as shown in these shops appeal to other groups as well. Young matrons living in Suburbia, for instance, find many of these outfits practical for their equally casual living demands. Their patronage sometimes equals that of the collegiate business volume in these shops.

Fifth Avenue first became actively aware of these potentials in the Twenties when stores sent fashion shows on tour to college towns. Orders were later filled from New York stores.

Peck & Peck's first college branch was opened in Wellesley, Mass. in 1929, and, not long afterwards, Lord & Taylor cautiously allowed one of its younger female staff members to stock a small display area with typical college fashions. By 1934 the shop had grown to include a large portion of the fifth floor. College girls were recruited as salesladies as the august ear of the retail merchants bent to listen to opinions of these youthful experts who knew the fashion preferences of their age.

Special College Issues

Before long the major fashion magazines had jumped on the bandwagon with special college editions published in August. Harper's Bazaar, Vogue and Mademoiselle turned a month of lean advertising into thick volumes swollen with advertising and features to aid and persuade the coed.

College shops today often select garments for sale on the advice of a board type arrangement of youthful representatives from various campuses. Newspaper advertisements for Macy's this year, for example, featured members of that firm's College Board modelling their favorite styles from Macy's College Shop.

Lord & Taylor's allows its salesgirls to advertise their collegiate affiliations by means of pennants worn on typical college outfits which the salesgirls model as they sell. Although pennants on the walls celebrate the Ivy League women's colleges the girls have a somewhat more varied background.

Advice to the new freshman is one of the major services performed by collegiate salesladies after their primary advice to buyers. With the aid of brochures put out by many of the department stores an astute young lady may sell an almost complete wardrobe to a member of the incoming class who suddenly finds that her high school clothing lacks the versatility and hint of sophisitication which college life seems to demand.

Applicants for these positions are generally chosen on the basis of enthusiasm, interest, personality, and aggressiveness. Abraham & Straus and Bonwit's also consider the girl's interest in retailing as a potential career. The stores thus encourage future and experienced employees in these summer positions.

The gentleman at Ohrbach's prefers white in a bulky knit sweater coat which zips up the front to a pointed collar. His lady friend has dramatized her fashionable tunic top with a contrasting sweater which emphasizes any one of several possible tunic color combinations.

Buffalo Stores Feature Knit Coats, Sweater Suits

BUFFALO, N. Y. — Knit coats and sweater-set suits are emerging in Buffalo fashion stores as important fall developments.

Fashion coordinators here agree that knits have assumed new significance in off-beat attire.

The stores of Oppenheim Collins & Co. have been featuring knit coats, in boy coat style, in their casual coat sections.

The knit coats are backed with Curon for shape retention plus all weather comfort. They have low slung pockets and detachable back belt and come in plum, loden, gold and black.

L. L. Berger, Inc. has been winning consumer interest in a three-part sweater-set suit featured in its Miss Berger Shop. The slim skirt and pullover covered with a bound cardigan is featured in wool colored in oxford gray trimmed with vicuna; American beauty with black, brown with black, or charcoal green with black.

Hens & Kelly Opens New Store In Buffalo

BUFFALO, N. Y.—Hens & Kelly has opened a new store in the South Shore Plaza with extensive display facilities for knitted outerwear for women, men and children.

The store has a total area of nearly 2½ acres on three floors and more selling space than the firm's downtown Buffalo store, according to Allen E. Neil, president. It is the company's fifth outlet in the Buffalo area.

Knitted outerwear gets excellent display exposure in the new store because strong emphasis has been placed on open display of merchandise and self selection. The store's fixtures were specially designed to facilitate maximum display.

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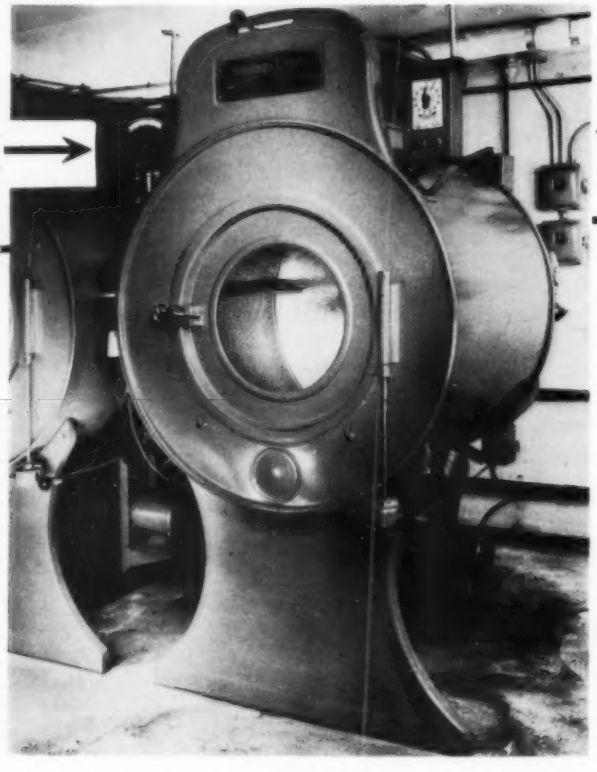

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TIMER with end of cycle indicator light and setting range of 0-60 minutes.

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Italian Ladies' Sweater Styles

Long Length Bulkies Boast Casual Comfort And Style

Basic black in a bulky is made casual by a row of white buttons marching gaily down the front of this collared, long sleeve cardigan.

Hooded interest highlights face or neck, ending in a deep plunge of black against a lighter poodle cloth textured fabric.

Its outsized, turned-over collar is the only accessory necessary to create an air of casual fashion in this long sleeve pullover.

Unbroken lines and undecorated boat neckline add an air of simple charm to this useful ribbed, long sleeved style shown here in white.

Fluffy balls of fiber tie a matching hood atop this pocketed cardigan style created from a horizontal ribbed fabric.

Horizontal stripes march across a black background in this boat neck sweater noteworthy for its stylishly shaggy baggy look.

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DYEING CO., INC.

68 THIRD ST., BROOKLYN 31, N. Y. TRiangle 5-0986

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67 FOURTH ST., BROOKLYN 31, N. Y. TRiangle 5-6665

brushing, napping and shearing of all synthetic fabrics

Dyeing, Finishing Of Orlon Sayelle

(*Continued from Page 7*)

F., the aggregates formed by Compound No. 8-S and cationic dyes might precipitate.

5. Raise the temperature at 2° F. per minute to 180° F. and dye 10 minutes at 180° F.

6. Raise the temperature to 190° F. at ½° F. per minute and dye 10 minutes at 190° F.

7. Raise the temperature to 200° F. at ½° F. per minute and dye 10 minutes at 200° F.

8. Raise the temperature to 210° F., to 212° F. at ½° F. per minute and dye 45 to 60 minutes at 210° F. to 212° F. (Blacks should be dyed 1½ hours.)

9. Sample and cool slowly; rinse well.

10. Scour heavy shades at 120° F. to 140° F. for 10 to 15 minutes with:

0.5% Alkanol HCS surface active agent

0.1% glacial acetic acid

11. Apply 0.5-1 percent cationic softener such as Velvetol AF at 120° F. for 10 to 15 minutes.

12. Extract and dry.

The indicated stepwise, slow temperature increase is rather simple to carry out in a dyeing machine equipped with automatic temperature control instruments. For this reason, it is advisable to have instruments that can control the rate of temperature rise at ½° F. per minute and also provide for holding a given temperature.

The recommended minimum dyeing time of 45 to 60 minutes at 210° F. must be maintained to assure good dye penetration and to activate maximum crimp development. Holding the temperature at the boil provides additional insurance in getting level dyeings, since cationic dyes transfer fairly well at the boil on Orlon Sayelle bi-component acrylic staple.

If, in spite of these precautions, the goods are slightly shaded or streaky, they can be leveled by boiling in a blank dye bath.

If it is necessary to adjust the shade of goods by making a dye addition, the bath should be cooled to 170° F. and the temperature raised to the boil in the same way as in the above dyeing procedure.

Most of the listed cationic dyes have roughly the same strength and shade on Orlon Sayelle and on Orlon Type 42 acrylic fibers. However, most formulas developed for Orlon Type 42 will give slightly different shades on Orlon Sayelle; therefore, it is advisable to match the shades in the laboratory before starting regular production.

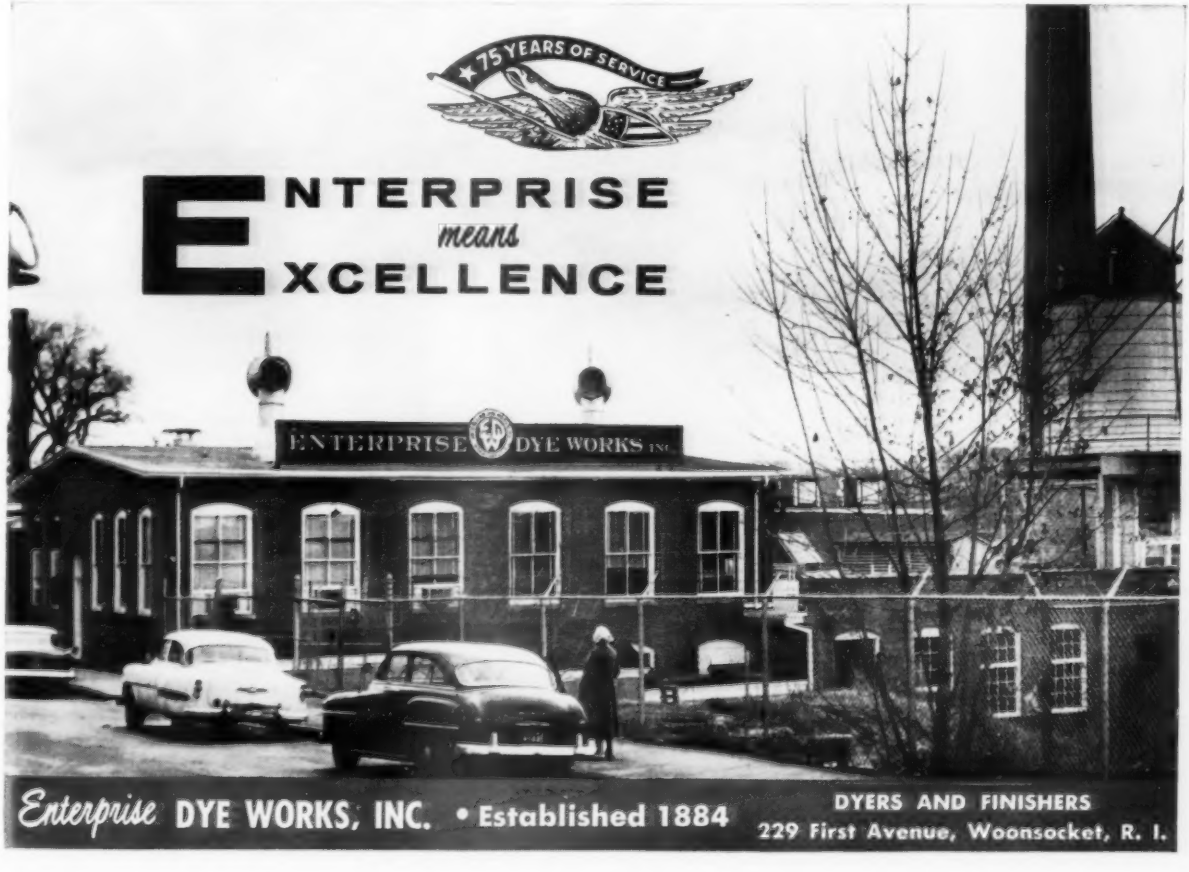
Orlon Sayelle has a very high capacity for cationic dyes. Hence, shade matching should be started from the light side to avoid using an excessive amount of dyes.

Satisfactory level dyeings have been achieved with cationic retarding agents. However, cationic dyes and cationic retarders inhibit somewhat the shrinkage and bulking of goods of Orlon Sayelle bi-component acrylic staple. Since the anionic Compound No. 8-S does not affect bulk development, the anionic dyeing retarder is replacing the cationic ones.

Bleaching and dyeing with disperse dyes will give maximum bulking and loft. Goods of Orlon Sayelle dyed in the presence of Compound No. 8-S with Sevron dyes up to 2 to 3 per cent concentration will bulk to the same high degree as bleached goods. Heavy shades (above 3 per cent Sevron dye concentration) will bulk somewhat less. The bulking differences will vary with the yarn and the construction. In some cases knitting adjustments will have to be made to compensate for the shrinkage differences between batches dyed to a light and to a heavy shade.

DRYING — To achieve maximum bulking and to avoid progressive shrinkage during home laundering, knit goods made of Orlon Sayelle should be dried in a relaxed state, preferably in a tumble dryer. A drying temperature of 180° to 200° F. is used.

Uniformity of drying conditions, particularly tension or compression, is essential in obtaining uniformly good fabric shrinkage, bulking and elasticity from lot to lot. Though the drying temperature has no effect on the crimp development, air drying of the goods should be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THE NEWEST OF THE ACRYLICS

avoided, as this may take place under uneven tension or compression. Instead, goods of Orlon Sayelle should be extracted and dried as soon as possible.

TOP DYEING—Procedure for dyeing Orlon Sayelle bi-component acrylic fiber in top form is as follows:

1. Tops have to be firm to prevent channeling.
2. Hot-wet load at 140° F.
3. Keep the pump pressure throughout the whole dyeing cycle at 5 to 7 pounds.
4. Apply 1 percent Avitex NA and 1 percent Nopco LV-40 (Nopco Chemical Co.) finish for 15 minutes at 120° F. Extract.
5. Slow down the speed of the back washer and increase the drying temperature to assure complete drying of the tops and achieve proper crimping of the fibers.

PACKAGE DYEING—Yarns of Orlon Sayelle can be dyed in standard package dyeing machines. Soft packages and low pump pressure should be used.

Yarn of Orlon Sayelle dried on dye packages is under tension, and the bulking and shrinkage will not be complete. Therefore, special care must be taken in the final finishing of knit goods made of package-dyed yarn to achieve the maximum possible bulking and elasticity. In some cases the following finishing sequence has given good results:

1. Apply cationic softener at 120° F. for 15 minutes.
2. Extract.
3. Steam 20 to 30 seconds at atmospheric pressure.
4. Tumble dry.

SKEIN DYEING—The bulking of Orlon Sayelle bi-component acrylic fiber takes place during the drying and not in the dye bath as in the case of high-bulk spun yarns of Orlon Type 42 acrylic fiber. Therefore, prebulking of the skeins is not necessary before scouring or dyeing. The bar spacing of the skein dyeing machine should be set only 10 to 15 percent under the dry length of the skeins.

To prevent uneven bulking, skeins should be packed loosely in the skein dryer and dried thoroughly.

Skein dyed yarns of Orlon Sayelle are highly elastic, and the tensions in backwinding, coning and knitting will stretch the yarns and pull out some of their bulk and loft. It is essential that goods knit from these yarns be relaxed. This is achieved by a wet treatment at 120° F. for 15 minutes with a softener—face inside if possible. The wet treatment is followed by relaxed tumble drying. Similar procedures are necessary to relax fabrics made of stock, top, and package dyed yarn.

The knitters, dyers and finishers have successfully met the challenge of this new fiber. They have shown skill and ingenuity in developing new technology to produce a variety of high quality knit goods of Orlon Sayelle.

Nathan Schwartz Introduces New Yarn For Bulkies

PHILADELPHIA, Pa. — A new textured yarn especially for the bulky knit trade has been developed by Nathan Schwartz & Sons, Inc.

According to the company, the new yarn, textured nylon, can be used for both circular and full fashioned knitting and can be knit on multi-feed machines without barre effect.

The Schwartz texturing process produces a yarn said to be non-allergic, non-pilling and non-fuzzing. It will be sold primarily in natural form. Garments made from it will lend themselves to level piece dyeing in a complete range of colors.

The texturing process makes it possible to texture yarns of 200 denier and higher, producing finished heavy textured yarns with a minimum number of plys. The product has been designed so that normal relaxing, presetting and finishing operations are similar to textured yarns already in use in the industry.

Sampling of the yarn has already begun with several leading sweater mills throughout the U. S. It is expected to be available immediately to meet the demand.

AviSun Names Director

MARCUS HOOK, Pa. — Raymond L. Hildebrand has been appointed director of industrial relations for AviSun Corporation, it was announced by Dr. Herschel H. Cudd, president. The firm is a leading producer of polypropylene polymer and film.

New Product Ideas For Knitters:

How Knitters Can Make More Money in Spring '61 With New Perma-Bond Foam Lamination Ideas!

A. D. GOSMAN, INC. • CARTERET, N. J.
A DIVISION OF PRECISION PROCESSING CORP.

Now there's a new season for you, in addition to the established Fall season for foam laminates! Markets you have never sold before can be reached with these new concepts—besides expanding your present markets.

Tricots, light gauge jerseys and flat knits in all natural and man-made fibers for rainwear, spring-weight jackets, car coats, swim and beachwear! Contrast-color unlined reversibles in double laminates—yet zephyr-light for Spring! All possible with Perma-Bond's new, perfected double and single lamination using wafer-thin 1/32" foam that stabilizes the knit—stops sag and stretch!

For women's slacks and toreador pants this is a completely new idea that opens still further horizons. And it's utterly fantastic with Helanca for swimwear!

Important:
Due to Gosman's leadership in the field of foam lamination, it would be wise to contact us *early* (like *now*) so we can reserve time to discuss *your* product development planning with you.

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BRINTON FABRICS MACHINE DIVISION

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MODEL PR-19

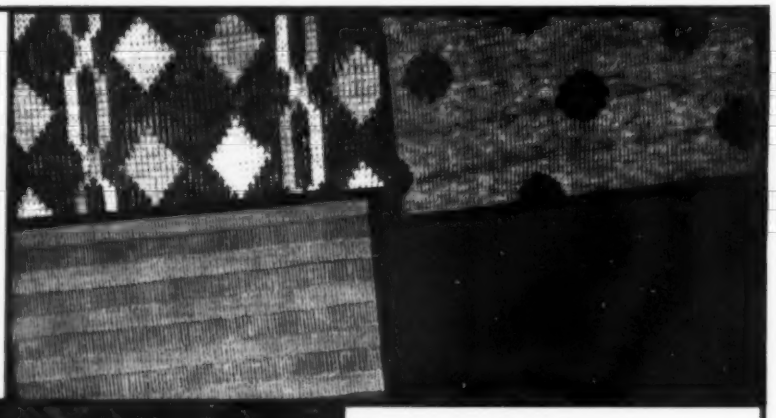
Rib Body
Stationary Cylinder
Diameter 28" and 30", Feeds 24
Cuts 8 thru 16

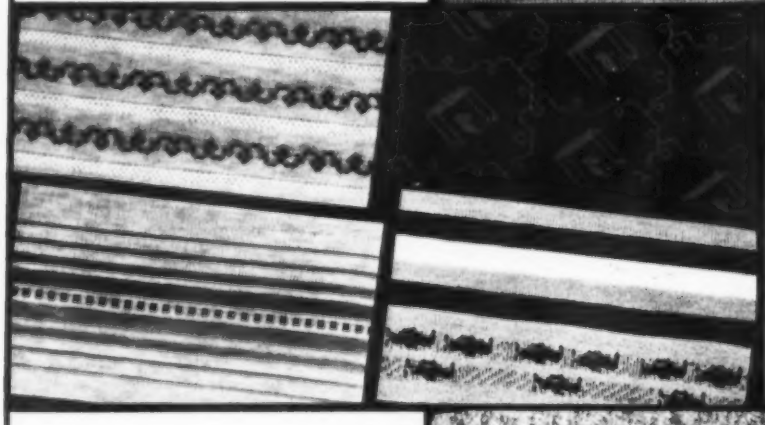
Patterns: Two or three color jacquard patterns, welt, blister and grenadine designs or combination of these constructions.

MODEL INTERLOCK

Stationary Cylinder — **Feeds 10 thru 32**
Diameter 12" thru 30" — **Cuts 10 thru 24**

Patterns: A fine quality fabric distinguished for its superior softness, warmth and strength.





MODEL RSTW

Revolving Cylinder
Diameter 12" thru 26", Feeds 16 thru 32
Cuts 8 thru 22

Patterns: Plain and fancy jersey with large variety of tuck and knit, welt knit and tuck, knit and welt patterns.

MODEL RSTWY

Revolving Cylinder
Diameter 26", Feeds 36
Cuts 10 thru 22

Patterns: Plain and fancy jersey with three position design wheels on all feeds, and up to 32 4-color yarn changers.

MODEL RSTWL

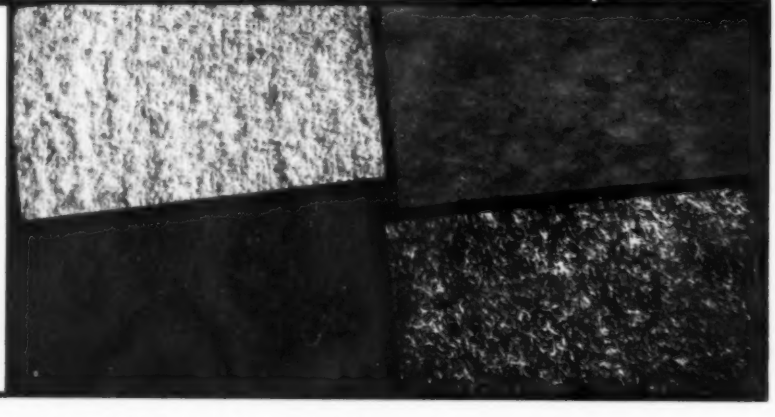
Revolving Cylinder — **Feeds 22 thru 32**
Diameter 16" thru 24" — **Cuts 10 thru 22**

Patterns: Plain or fancy loop fabrics with a brush or shear finish.

MODEL RSF

Revolving Cylinder
Diameter 26", Feeds 36
Cuts 8 to 22

Patterns: Fleece fabrics.



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Piece Dyeing Of Acrilan Sweaters

(*Continued from Page 9*)

selected from those which do not stain Acrilan 16 under the the conditions of dyeing.

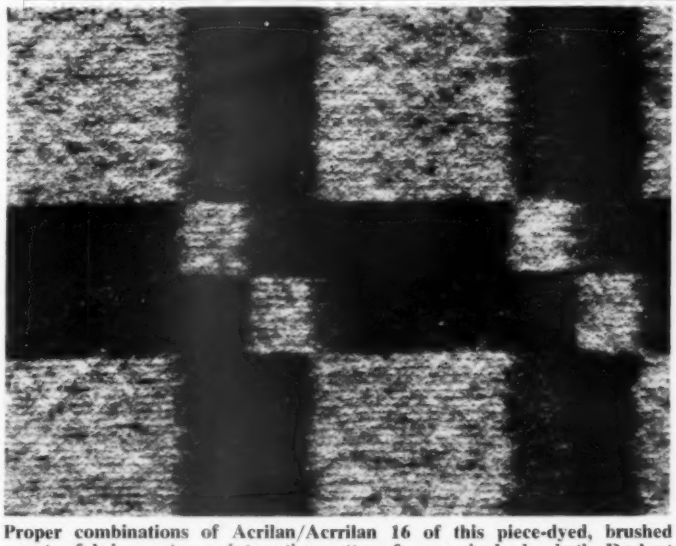
The following dyestuffs are representative of a wide selection of colors found to satisfy these requirements. For additional color recommendations consult either your regular dyestuff supplier, or The Chemstrand Corporation. Following is a partial list of basic dyes for dyeing Acrilan 16 in Acrilan/Acrilan 16 blends:

Sevron Brilliant red 4G, (DuP.); Genacryl Red 6B, (G.D.C.); Sevron Red GL, (DuP.); Astrazon Orange 3RL, (Verona); Astrazon Yellow 7GLL, (Verona); Sevron Yellow R, (DuP.); Basacryl Blue GL, (Putman); Sevron Blue B, (DuP.); Deorlene Blue 5G, (Ciba).

Acid Dyes

A partial list of acid dyes for dyeing Acrilan in Acrilan/Acrilan 16 blends is given below:

Alizarine Light Red R, (Sandoz) Chromolan Red 3RB conc. 200%, (NAC); Xylene Light Red 2GL ex. conc., (Sandoz) Wool Fast Orange GA-CF, (GDC); Neolan Yellow GR conc., (Ciba), Xylene Light Yellow 2G conc., (Sandoz), Alizarine Light Blue B, (Sandoz), Neolan Blue 2G conc., (Ciba).



Proper combinations of Acrilan/Acrrilan 16 of this piece-dyed, brushed sweater fabric creates an interesting pattern from a single dye bath. Darkest portions of the pattern are of 100 percent Acrilan, and the lightest portions of 100 percent Acrilan 16. A 65 percent/35 percent blend of Acrilan/Acrilan 16 acheive the gray areas of the pattern.

With proper selection of dyestuffs, the cross dyeing of the blends of the two types of Acrilan is a simple and practical process offering striking new styling possibilities in an all-Acrilan sweater, while retaining the ease and economy of the piece dyeing process.

New Equipment

Combined Washing-Dye Machine Is Introduced

PHILADELPHIA, Pa.—Venango Engineering Company, here, has developed a combination dyeing and washing machine. This unit is based on the rotary dyeing machine principle, has a cylinder of the open pocket type. A variable speed drive provides the speed change necessary in the cylinder for the additional agitation required for washing action. The rpm of this cylinder can be varied within the range of six to 25 revolutions. An adjustable timer is incorporated into the combined machine to allow reversal adjustment as desired.

Claimed advantage of the new Venango machine is that it offers flexibility for the washing cycle and the dyeing or bleaching cycles in subsequent operations, without extra handling between the processes.

The machine has outboard bearings and is available in Type 316 stainless steel as well as the standard Type 304 stainless steel construction.

...all types of wool yarns
dyed, dried and delivered right

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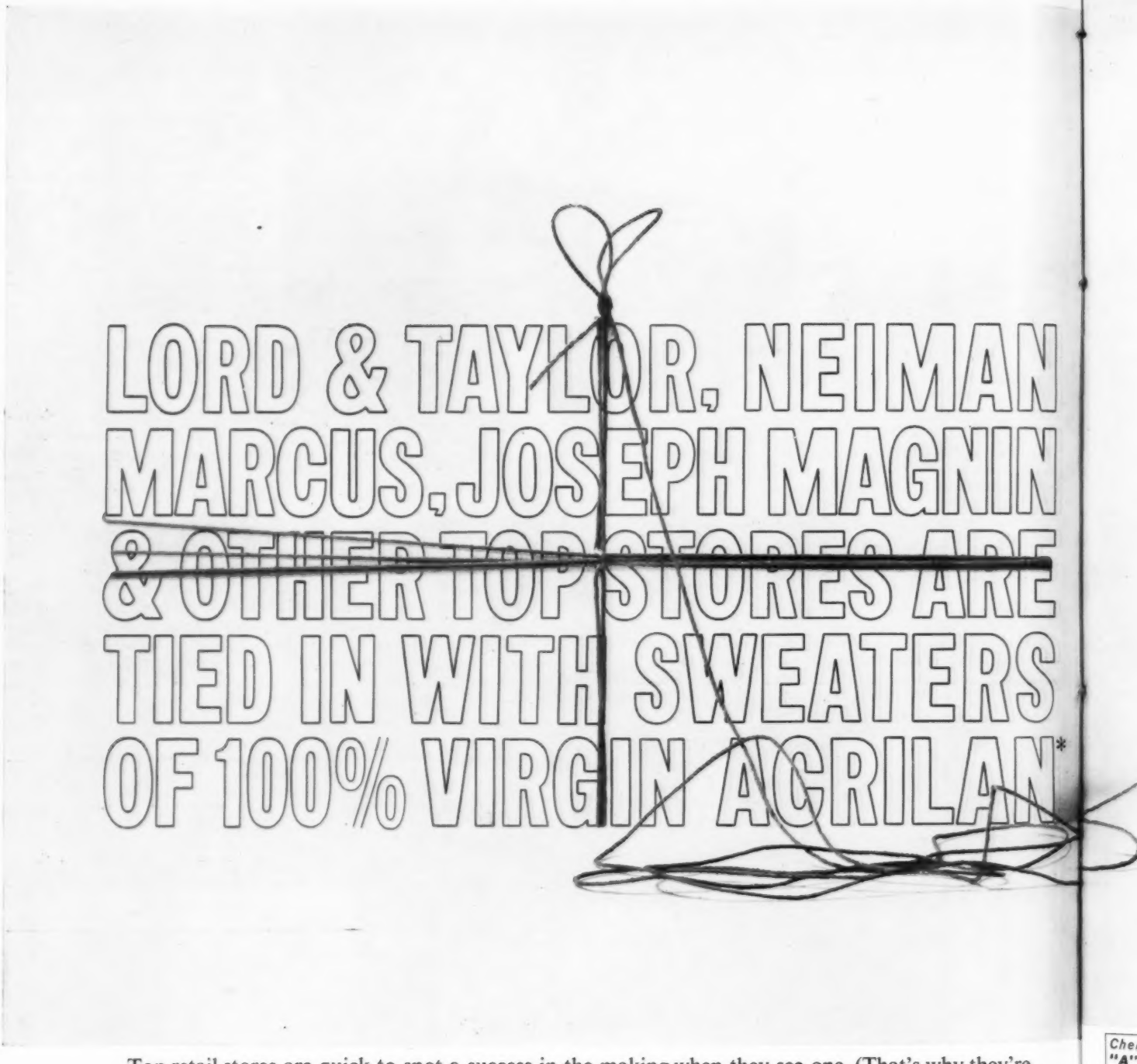
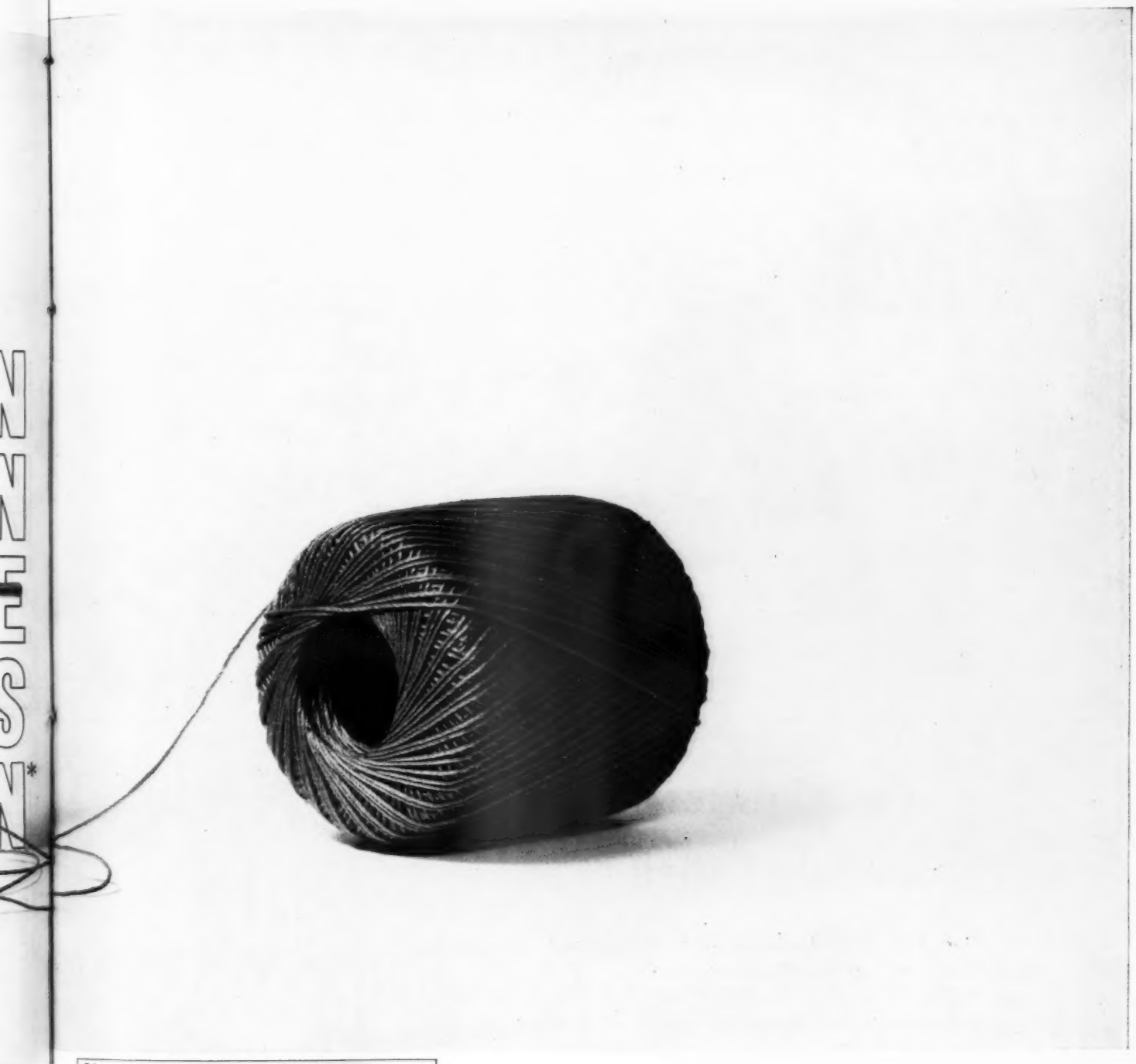


Top retail stores are quick to spot a success-in-the-making when they see one. (That's why they're top stores!) And that's why The Bon Marche; Carson Pirie,Scott; Hecht Co.; Maison Blanche; Saks Fifth Avenue; Scruggs-Vandervoort-Barney; Strawbridge and Clothier; and many, many other fine stores, are tying in tight with sweaters of 100% virgin Acrilan acrylic fiber for Fall. Buying them. Selling them. Reordering them. And that's why—if you're an alert knitter—you'll be getting Acrilan just as fast as you can. For the whole story on this big demand for sweaters of 100% virgin Acrilan —and how *you* can get in on it,call The Chemstrand Corporation, OX 5-5100, Ext. 312. Fast.

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVENUE, NEW YORK 1, N. Y.
DISTRICT SALES OFFICES: 350 Fifth Avenue, New York 1; 3¼ Overwood Road, Akron, Ohio; 197 First Avenue, Needham Heights, Mass.; 129 West Trade Street, Charlotte, N. C.; California Office: 707 South Hill Street, Los Ang



Chemstrand has licensed this ***"A"-Acrilan trademark*** *as an ingredient trademark for those fabrications that provide utility, styling and consumer value. In order to obtain a license to use this trademark, the fabrications must meet certain rigid specifications as established by The Chemstrand Corporation.*

ACRILAN*
ACRYLIC FIBER
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Chemstrand makes only the fiber; America's finest mills and manufacturers do the rest.

Los Angeles 14 • Canadian Agency: Fawcett & Co., 34 High Park Blvd., Toronto, Canada • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala.; CHEMSTRAND® NYLON—Pensacola, Fla.

LOOK TO CARON'S BLEND OF A

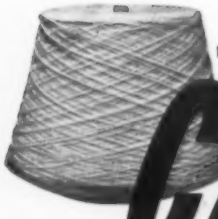
ACRILAN*

ACRYLIC FIBER

*Registered trademark of The Chemstrand Corporation

for variegated colorings in a rainbow of beautiful shades

Marled yarns and Heathers in your knitting plans? Then it will pay you to consider Caron's ACRILAN blend . . . the perfect blend of fibers to give you a veritable rainbow of beautiful shades with a minimum of dyeing effort. Caron's ACRILAN blend is *new* . . . and it's *good*. You'll like it . . .



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CARON spinning company

ROCHELLE, ILLINOIS • ROBESONIA, PA. • NEW YORK CITY

Dyeing, Finishing Blends Of Orlon

(*Continued from Page* 17)

temperature to 180° F. at 3° per minute and hold one hour.

The two dyes were selected because they are primarily designed for use on Dacron polyester fiber and they have very limited affinity for Orlon; this enables level application of color in the extremely small amounts required. This fact plus their excellent lightfastness and brilliance of shade makes them ideal for tinting Orlon. The cast or hue of the white may be varied by changing the amounts or ratio of the two dyes as shown above.

The tetrasodium pyrophosphate and the monosodium phosphate maintain a neutral pH in the tinting bath—about pH 7 to 7.2, which is optimum for this process. An appreciably higher pH at this temperature can yellow the Orlon, and on the other hand, if acid conditions are used, the white dye will not exhaust properly on the cotton.

Pontamine White BTS was chosen as the cotton white dye, because it had the best fastness properties of any tested in this application. The best available white dye should be used for the cotton to approach the durability of the built-in fluorescence of Orlon Type 72 and so to get acceptable fastness with the blend. It has not been possible to match on cotton the good fastness to washing and to light that is built into the white of the Orlon Type 72. However, most detergents used in the home contain a white dye which replaces the white dye lost from the cotton in washing.

The better and more lasting whites on blends of Orlon Type 72 and cotton are perhaps of greatest significance in fields other than knitted outerwear—underwear and sleepwear, for example. Significant penetration into these fields can be expected to stimulate more interest in the blend for knitted outerwear. In addition, the better white should be of immediate significance in knitted outerwear such as summer weight sport shirts.

CROSS DYED SHADES — The first necessary step in getting more uniform and more attractive heathers and cross dyed effects with blends of Orlon

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- WOOL GARNET
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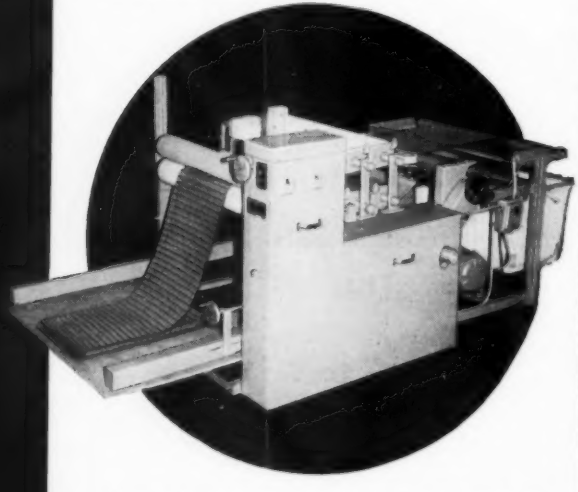

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acrylic fiber and cotton was a definition of the problem. Once it was established that uneven blending was the source of the trouble, attention was focused on the various steps of yarn making. The situation is somewhat akin to that in making worsted heathers. It is well known that more effort is required to make good even worsted heathers than is required to make good uniform yarns for solid colors.

Analysis of uneven heathers of Orlon acrylic fiber and cotton revealed that essentially all of the objectionable slubs consisted of very short cotton fibers. This led to the first requirement for a good cross dyeing yarn to make heathers: use of a good grade of combed cotton, with a minimum fiber length of 1¼ inches.

Blending of the Orlon and the cotton is normally done in the drawing operation. Usually eight strands of Orlon sliver and two strands of cotton sliver are combined. A total of four draw passes consisting of one blending pass and three additional passes has been found optimum for the particular equipment in a number of mills. Generally no further improvement of blend uniformity is realized by using more than four passes. As few as two draw passes may be adequate for cotton spun yarns made 100 percent of one fiber to be dyed in solid colors. The extra steps are part of the price to be paid for a good cross dyeing blended yarn.

It is equally essential that the spinning mill schedule regular and frequent cleaning and waste removal in all operations. Otherwise short cotton fibers collect and later are picked up by the yarn as slubs or neps that would be noticeable and objectionable after cross dyeing. Guide surfaces should be carefully checked in roving, spinning, coning and plying (if applicable) to eliminate nicked, burred or badly worn surfaces that could produce slubs.

The knitter must be aware that blended yarns of Orlon acrylic fiber and cotton are bulkier than 100 percent cotton. Hence he should use larger needles and more open constructions in knitting the blend that he uses for the same count yarn of 100 percent cotton. Other-

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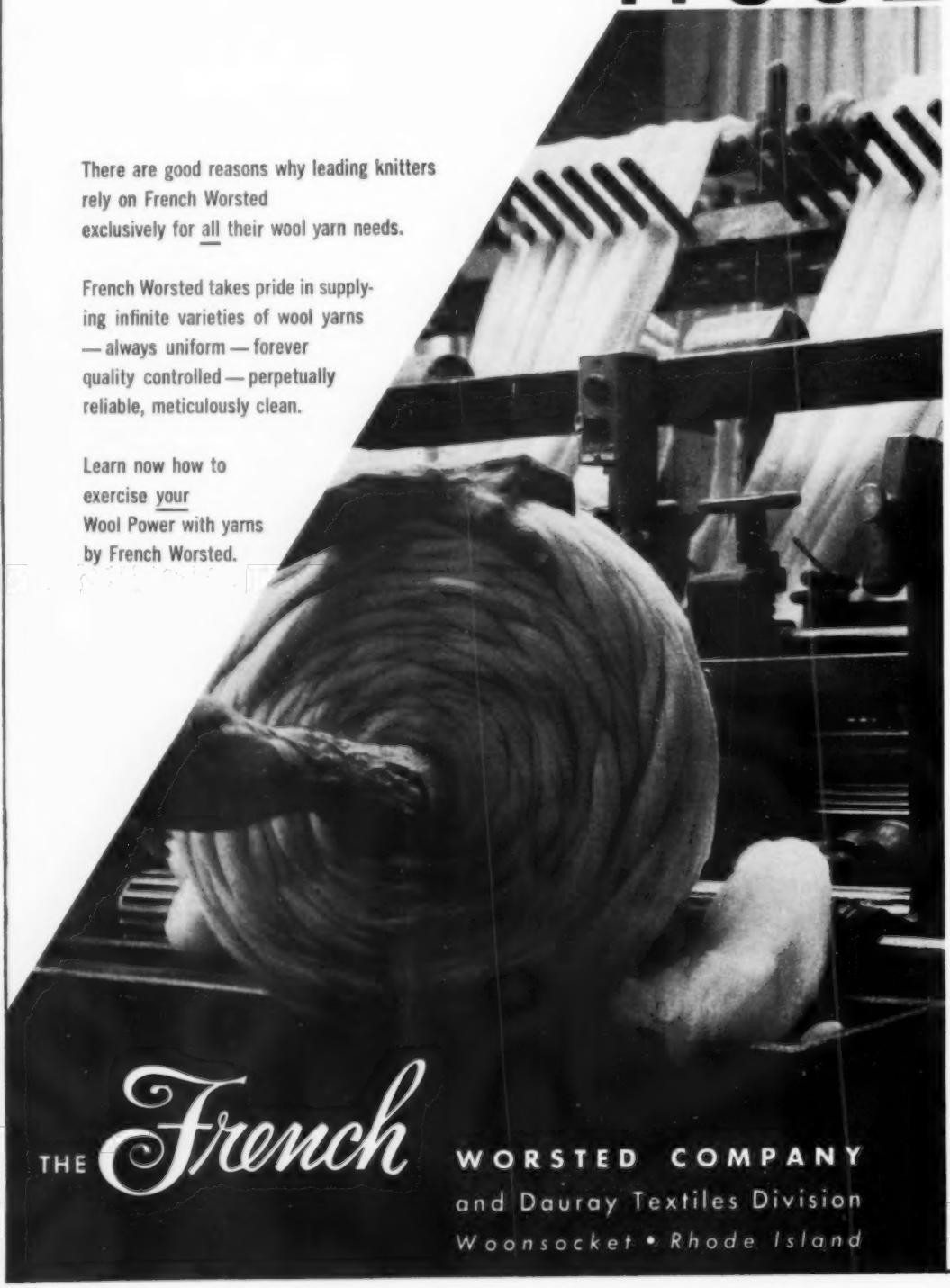

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wise, poor knitting performance and boardy fabric can result. Good maintenance of yarn guide surfaces and good housekeeping are just as essential in knitting as in spinning to preserve good yarn quality.

DYEING PROCESSES — Many pastel shades have been dyed on knitted fabrics of Orlon and cotton by an established one-bath process. Disperse dyes are applied to the Orlon and direct dyes to the cotton in a procedure much like that used for blends of acetate and viscose rayon. Medium and heavy shades dictated that cationic dyes be used on the Orlon to get adequate build-up and depth. Until recently it has not been possible to apply cationic and direct dyes from the same bath.

A key to applying these dissimilar colors from the same bath was the discovery that many direct dyes leveled rapidly on cellulose in a boiling bath even in the presence of salt (sodium sulfate). The technical literature on application of direct dyes to cellulose points out correctly that these dyes strike or go on cellulose very rapidly and unlevelly at the boil when an electrolyte such as sodium sulfate is present. Surprisingly, in view of what has been written, many of the best direct dyes (best fastness properties), level satisfactorily on cellulose after only 15 to 20 minutes of boiling in a bath containing sodium sulfate.

The speed with which these dyes level on cotton has enabled them to be applied to the blend of Orlon acrylic fiber and cotton with only a small increase over the time required for dyeing 100 percent Orlon. The direct dyes are added at the boil after the cationic dyes have been exhausted on the Orlon. About 15 minutes additional boiling allows the direct dyes to level on the cotton. Slow cooling (necessary for Orlon in any case) then permits the direct dyes to exhaust on the cotton. More salt is added if needed.

Below is a typical procedure for dyeing heavy shades on blends of Orlon and cotton or rayon:

1. Set dye bath at any convenient temperature up to a maximum of 180° F.

2. Add: 0.5% nonionic surface active agent such as Alkanol HCS surface action agent; 20% sodium sulfate (calcined Glauber's Salt); 1% acetic acid (adjust pH to 5 to 6); X% cationic dyes.

3. Heat to 180° F. (if below) at 3° F. per minute. Then heat to boil (205-212° F.) at 1° F. per minute.

4. Dye the Orlon to shade at the boil, allowing at least one hour at the boil before sampling.

5. Adjust pH to 6.5 to 7.0 and add direct dyes.

6. Run 15 minutes at the boil.

7. Shut off steam and let the bath cool by radiation to 160° F.

8. Sample and if necessary add more salt or direct dye to match shade on the cellulose.

The direct dyes should be aftertreated with a suitable fixing agent to improve their fastness to washing. Such aftertreatment enables the production of many shades that meet a 120° F. or a 140° F. washing test. For higher fastness it is usually necessary to dye the cotton with vat, naphthol or sulphur dyes generally entailing a yarn dyeing process.

For the future there is considerable interest in the use of fiber reactive dyes on the cotton component in blends of Orlon acrylic fiber and cotton. This new class of dyes offers outstanding brilliance, approaching that of the cationic dyes on Orlon. In addition, the fiber reactive dyes have good fastness properties and their application is reasonably simple. They will undoubtedly be increasingly valuable supplements to existing cellulosic dyes. The extent of their usage on blends of Orlon with cotton will doubtless depend on the variety of fiber-reactive dyes that becomes available, and particularly their cost in relation to established types.

Blue Dye From Sandoz

A new blue dye, Foron Brilliant Blue GFLN ultra-dispersed Pat., has been developed by Sandoz, Inc. It is said to be brighter in shade, as well as faster to light, in comparison with its companion product, Foron Blue GFL ultra-dispersed Pat., and stable to dyeing at the boil. The company recommends it for use on acetate, triacetate, and polyester fibers.

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Dyeing And Finishing Of Knitted Fabrics Made Of Arnel/Arnel 60

(*Continued from Page* 21)

brighteners, if desired, are applied in a second bath to chlorine free fabric as follows: 0.1-0.3 percent (owf) Uvitex ERN and 0.05-0.10 percent (owf) Tinopal ANA (chlorine will cause yellowing) with 1.0 percent acetic acid at 205-208° F.

FINISHING—A wide range of hands can be achieved on this blend with proper finishing. Cationic softeners, applied in the final rinse at 120° F., are the most common type finish applied. Softeners which have been used successfully are: Softex 596, Velvatol AF, Avitex NA and Ceranine HC.

Alkyd resins, such as Methacrol FNH, can be used to get a firmer hand. Water repellency and/or variations in hand can be obtained by using low curing type silicone emulsions which can be applied either exhaustively or by padding. Aston 108 has been found satisfactory for durable antistatic protection.

Drying and Calendering

Drying and calendering should be carried out with minimum tensions to achieve optimum fabric stability. Best drying temperatures are at 225-250°F. for dyed shades and 190-200°F. for white. During calendering the roll pressures should be kept to a minimum, since excess roll pressure can cause glazing and reduce the fullness of the hand.

PRINTING — Generally, pigment printing gives the best wash, dry cleaning, and lightfastness on this blend. Printing with disperse colors is limited to fine line prints, due to the dye distribution favoring Arnel.

PLEATING—Arnel and Orlon knit jersey can be durably pleated either by hand pleating or machine pleating techniques. Typical pleating conditions for Arnel and Orlon jersey are:

1. For hand pleating, preset the pleats in a hand pleat form for five minutes at 15 psi. The fabric is then taken out of the form, rolled onto a tube between tissue paper and autoclaved 15 minutes at 15 psi.

2. Where machine pleating is used, presetting is not necessary. The pleated fabric is autoclaved 15 minutes at 15 psi.

Hand Washable

Fabrics pleated by this method can be hand washed-drip dried, machine washed on a synthetic setting and tumble dried, or dry cleaned.

SUMMARY — Arnel in blends offers both functional and economic advantages in circular knit applications because of its dimensional stability, pill resistance, color styling potential, and ease of care properties. The introduction of Arnel 60 on the market permits the use of Arnel in a much broader range of fabrics.

Practical procedures for dyeing white, reserve, cross dye and union shades on blends of Arnel with cotton or Orlon have been given. Finishing procedures with resin formulation for the cotton blends are given. Normally cationic softeners are used in finishing the Arnel and Orlon blends.

ACKNOWLEDGEMENTS — The writer wishes to acknowledge the work of W. F. Moore, Jr. and D. D. Ward for their work in developing some of the procedures presented.

1) Lacy, R. E. and Dayvault, J. A. "Dyeing and Finishing Special Blends of Arnel with Acrylics and Arnel with Cotton in Circular Knit Applications"—Part I, *Am. Dyestuff Rep.*, p. 45-49 (Feb. 8, 1960); Part II, *Am. Dyestuff Rep.*, p 45-47 (Feb. 22, 1960); Part III, *Am. Dyestuff Rep.*, p 37-39 (Mar. 7, 1960)

2) Sprague, B. S., "The Structure and Properties of Arnel 60—A New Cellulose Triacetate Staple," (Mar. 25, 1960) presented at 30th Annual Meeting of TRI, NYC

Turbo Names Executive

PHILADELPHIA, Pa. — Franklin B. Jayne has been named manager of the engineering, ordnance and electronics department of Turbo Machine Co., Lansdale, Pa. He was manager of Philco Corp.'s fuse and microwave and antenna group of weapon systems division, of the government and industrial group.

New Dyeing Assistant

BOUND BROOK, N. J. — Brighter, heavier shades in a wider range of colors are to be expected for polyester, triacetate and acetate fibers when a new dyeing assistant Cyanatex EM, is included in the dye bath, it was announced by American Cyanamid Company, developers of the product.

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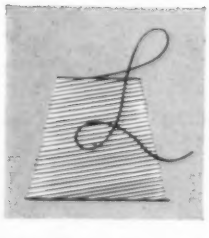

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Review Of Dyeing Advances Abroad

(*Continued from Page* 29)

a temperature control within ±½ °C, the unit is said to be suitable for virtually all synthetic fibres, and can be used for steam setting yarns, fabrics and garments.

A two-bowl mangle, the Kusters-Hunt Aquaroll, built in England by Hunt and Moscrop Ltd., Manchester, is said to have an exceptionally strong squeeze effect and eliminates camber at all pressures. Evenness of squeeze over its full width of fabric, automatic compensation for any deflection of counter-bowl and careful treatment of the fabric are said to be other advantages of this unit. It has two frame sides, an ebonit covered top roller carried in roller bearings, a non-corrosive pressure chamber with a Perlon squeezing roller and water reservoir. The Perlon roller, which has no bearings, is sealed on all sides and floats on a cushion of water formed within the pressure chamber. When the machine starts, the water forces the Perlon roller against the ebonite bowl and as the pressure is applied evenly to the projected area of the roller surface, an even pressure distribution across the entire face width is achieved. Pressure is applied by a rotary pump which draws its water from a reservoir where the water level is maintained by a floating valve.

Calcozine Dyes For Acrylic Use

(*Continued from Page* 11)

used practically on many blends, especially blends with wool, the goods can be salvaged only by dyeing them to a deeper shade, such as black.

Of the five initial colors in the new line, the most interesting to the trade is Calcozine Acrylic Violet 3R. This dye produces a rich purple shade totally unlike any color that dyers and users of acrylic fibers have previously been able to achieve. Blue, red and two shades of yellow complete the present product line. An orange is currently in development.

Calcozine acrylic dyeings are brilliant in shade. Their resistance to light, spotting, perspiration, washing and wet rubbing is equal to or better than that of most other acrylic dyeings.

For Other Fibers Too

Although the new dyes are applicable to such fibers as Orlon Type 42, Acrilan 16 and Verel by the salt and acetic acid procedure described herein, they can also be used by modified methods of application to dye Creslan 58, Dacron Type 64 and Acrilan 3400. With the latter fibers, pre-treatment or suitable dyeing assistants are recommended.

Because they show less tendency than most other dyes to stain cellulosic and animal fibers, the Calcozine line is expected to find extensive use in blends. In wool blends, for example, the wool is left white or only lightly tinted. Stripping or clearing the wool before cross-dyeing, therefore, in most cases will not be required. In addition, the shade of acid dyes on wool will not usually be changed appreciably when the Orlon is cross-dyed with a Calcozine color.

This Bondaknit jacket by Rubin Grais features a Highland Cotton knitted construction bonded to polyester foam, to provide warmth without weight and afford insulation against wind. The jacket features a dropped shoulder treatment.

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Procion Fiber Reactive Dyes

(*Continued from Page* 23)

cellent rubbing fastness.

The dyer using naphthols has his choice of a wide range of orange, scarlet and red shades, a few blues and fewer yellows. The Procion dyes within either range may be freely intermixed to produce virtually any shade at any depth.

VAT DYESTUFFS. Owing to difficulties encountered in premature oxidation, vat dyes often must be applied in closed becks. Temperature control is critical, the process is lengthly and level dyeings are obtained only by careful manipulation of the entire dyeing process. Properly applied vat dyes are extremely fast to wet treatments and range from fair to excellent in resistance to light fading.

Comprehensive Shade Range

The shade range capable of being produced with vat dyes is fairly comprehensive, with some notable exceptions; there exist no turquoise shades and no bright reds, and lack of brilliance and clarity is apparent throughout. The Procion range is especially strong in reds, scarlets, yellows and blues.

DIRECT DYESTUFFS. Although the application procedures for direct dyes are fairly simple, the resultant dyeings do not have good wet fastness. Aftertreatments with direct dye fixatives can improve their wet fastness somewhat, but this improvement usually is achieved at the expense of clarity of shade. Procion dyes, besides being easy to apply, do not require an aftertreatment, as good to excellent wet fastness is an inherent characteristic of the dyestuff, as are brilliancy and clarity of shade.

Recent Developments In Procion Application

Where the knitgoods dyer has available to him padding equipment capable of applying dye liquor evenly to his goods he will be especially interested in two recent developments in Procion dyestuff technology. These are the Procion-resin process and pad-batch (cold) process.

In March of this year, Arnold, Hoffman & Co. Incorporated of Providence, R. I. announced the development by their parent company, Imperial Chemical Industries Limited of England, of an entirely new concept of applying Procion dye and thermosetting resin simultaneously. This process eliminates the dye processing costs from the dyeing and finishing sequence and offers further advantages of high dyestuff fixation and high tinctorial yield. The normal resin finishing cycle, pad-dry-bake-wash off is employed, the only difference being that the Procion dye and a special catalyst are added to the resin bath.

The Procion-resin process has proved highly satisfactory in full-scale trials using woven fabrics, and it is hoped that further trials will indicate its practicability for use with knitgoods.

In the pad-batch (cold) process, the goods are padded with a cold solution of non-"H" Procion dyestuffs to which a suitable alkali solution is metered. The goods are then batched or plaited down for 1-2 hours at room temperature and finally rinsed in water and soap-boiled. The process is proving to be inexpensive and most successful on a wide range of woven goods.

KMRA Show Jan. 22 At Sheraton-Atlantic

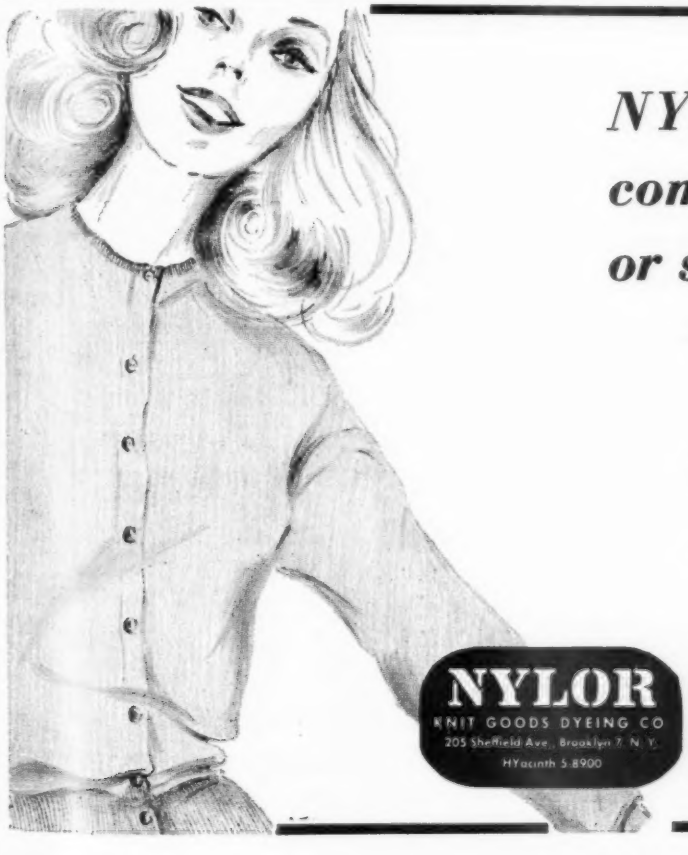
The Knitwear Mill Representatives Association will hold its 14th Annual fall showing Sunday to Thursday, January 22-26 at the Sheraton-Atlantic Hotel here.

This will be the first time in the past few years that the show will not be at the New York Trade Show Building. A KMRA spokesman said the shift was made because of prior January commitments by the Trade Show Building.

More members are expected to exhibit this year than in recent years because of the increased emphasis on aggressive selling.

Samuel L. Fuller Joins American Viscose Corp.

PHILADELPHIA, Pa.— Samuel L. Fuller has joined the Industrial Merchandising and Product Development Department of American Viscose Corporation in New York. He was formerly with the technical section of the Sales Division of the Textile Fibers Department of E. I. Dupont.



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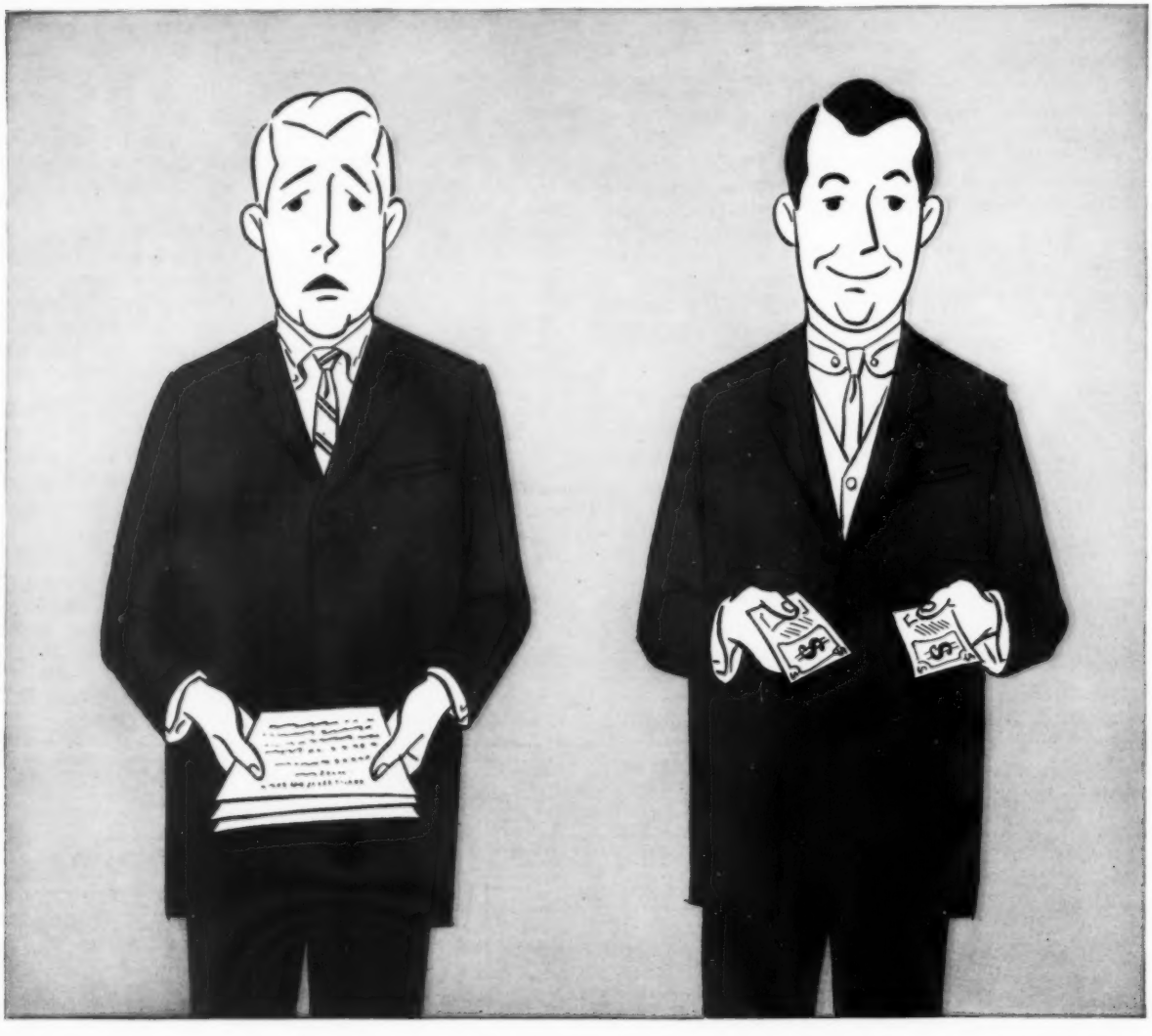

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Cationic Dyestuffs Used For Acrylics

(*Continued from Page* 15)

yard, are suitable to obtain a good effect, colorwise. Thermoplasticity of acrylic fibers above the 70 degrees C. level and the resultant high sensitivity of the fabric to pressure is unsuitable for jigger use. Use of covered stainless steel reels was found to yield the best results. Importance is placed to slow, gradual cooling to 50 degrees C. and less, after cationic dyeing. After rinsing and suctional hydroextraction, fabrics are dried on a stretching frame at 100 to 120 degrees C. applying four to five percent warp advance to the fabric without strain on the weft.

For fabrics that are a combination of acrylic fibers with wool or cellulose fibers, Germans use either a one-bath process with two dyeing steps, or separate baths and interpose cleaning of the non-acrylic component. On the acrylic component those cationic dyestuffs are used which have the least affect on the non-acrylic component. This is difficult, however, in use of dark colors, and a reductive cleaning of the non-acrylic component must be interposed. German practice selects for dyeing of the wool component those acid or metallic dyestuffs which color the acrylic component only lightly, if at all. The same selection is made for the direct dyestuffs used for cellulose fiber components.

Kaleidoscope Offered In Creslan Promotion

A kaleidoscope will be mailed to customer groups in the textile trade to point up an advertising campaign in Life magazine for Creslan acrylic fiber.

American Cyanamid Company's Fibers Division is using the kaleidoscope in a current ad which calls Creslan "the fiber with the sense of color." The ad is part of a series of monthly insertions in Life designed to build national consumer recognition for Creslan.

The toy kaleidoscope will be mailed as part of a kit that includes the Creslan trademark, Cyanamid's corporate logotype and a reprint of the ad.

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Some of the most popular STOLL Machines for the American market for fancy collars and trimmings are:

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New Equipment

Fletcher To Show 4 New Machines

PHILADELPHIA, Pa. — Fletcher Industries will exhibit four operating models of its latest machines at the Southern Textile Exposition in Greenville, S. C. October 3-7.

The machines are: an all-purpose high-speed elastic web loom; the Power-Fab, a high-speed webbing loom; the Master Duplex Doubler Twister and the Jumbo Duplex Twister.

Edward T. Taws, Fletcher president, will lead the group attending.

The all-purpose elastic web loom, shown for the first time, can be converted from elastic to non-elastic in a few hours. This five-foot loom, designed to produce heavy government webbings, will operate at speeds as high as 250 picks a minute and up to 300 picks a minute on lighter fabrics. It also provides heavier webbing without the machine bulk usually required. Its rigid construction makes possible production of greater variety of narrow fabrics and webbings on the same machine with a minimum of mechanical changes.

Individual harness frame guides reduce the harness load for the entire loom. The heavier cam shaft and larger diameter cams provide increased and smoother lift at higher speeds.

The fully automatic Power-Fab loom is similar to the High-Speed All-Purpose Elastic Web Loom, but without the change-over from elastic to non-elastic.

The Duplex Doubler Twister will be equipped at the show with new special feed roll attachments for making novelty yarns of glass, nylon and other synthetics and natural fibers. The Duplex is a 20-spindle Twister with a five-inch ring, up to a ten-inch traverse and a bobbin capacity of 2½ pound filament yarns or 1½ pound spun yarn. It produces bottle bobbins, straight traverse bobbins and other pieces of equipment. In all other respects it is like the Jumbo Duplex Doubler Twister.

The Jumbo Duplex 22-Spindle Doubler Twister has a five-pound package. The production capacity on this 1960 model is greater than that of any comparable machine, according to the company. It has a six-inch ring, a nine- and ten-inch traverse on the bottle bobbin or a 10½-inch traverse on double-tapered tubes. The gauge is nine-inches center to center, and the width is twenty-inches at the floor.

The model to be exhibited at the show has full-length balloon separators that include swing-out operation to permit cleaning while the machine is running. The company says the machine handles all yarn sizes and every type of package in less time than previously possible.

New Screen Printing Method Announced

Screen printing on knitted fabrics is a familiar process. However, printing with automatic equipment on lightweight knitted fabrics—for example 15 denier nylon and lighter—has met with difficulties since this fabric has a tendency to roll up and mark off.

To overcome these difficulties, Reggiani of Bergamo, Italy, manufacturer of automatic screen printing machines, has developed a technique of printing such knitted fabrics on high production automatic equipment and still achieve high quality standards.

The Reggiani machine is said to be complete in every detail including motors and dryer and to be "the fastest machine on the market."

The developer of the machine and process, Reggiani, is one of the largest commission finishing houses in Europe with a very large and up-to-date bleaching, dyeing and printing plant. The Meccanotex was designed for their own use but in 1956 the firm decided to offer it for sale to the screen printing industry.

Reggiani screen printing machines are represented in this country by Lendt and Company, Inc., New York City.

Edward Hochberg Joins Pellon Industrial Sales

Edward G. Hochberg has joined the Pellon Corporation as industrial market developer and sales engineer, the company announced this week. His duties will be in the vinyl coating and in other industrial applications.

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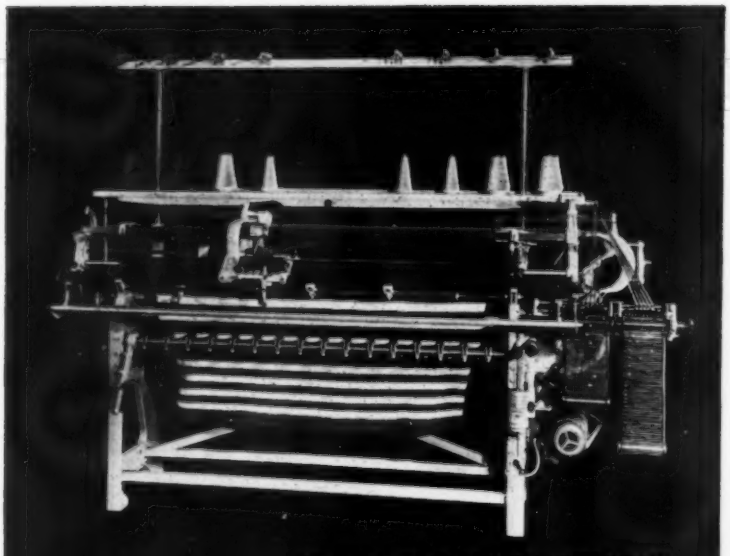

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  LOW VOLTAGE STOP MOTION. KNOT CATCHER. NEEDLE DETECTOR. RED SIGNAL TROUBLE LIGHT ON STOP MOTION.

Conventions

Textile Chemists To Meet Oct. 6-8

PHILADELPHIA, Pa.—The national convention of the American Association of Textile Chemists and Colorists, meeting October 6-8 at the Sheraton Hotel will have as its theme, "New Fibers, New Blends, New Fabrics." Dr. S. Graeme Turnbull, Jr. of E. I. du Pont de Nemours & Co., Inc., is chairman of the technical program committee.

The first day's speakers and their topics are: "Dyeing and Finishing of New Cellulosic Fibers," a panel discussion led by Dr. Walter J. Hamburger of Fabric Research Laboratories; "Fabrics from Creslan Acrylic Fiber" by H. C. Haller of American Cyanamid Co.; "Continuous Dyeing on the Monforts Reactor in the Synthetic Dyehouse" by Fred Fortess of Celanese Corp. of America; "Dyeing and Finishing of Man-Made Fibers in a Cotton Finishing Plant," Heyward Simpson of Reeves Bros., and "Improved Textile Properties from New Chemical Structures" by Arnold M. Sookne, winner of the Olney Medal Award. Dr. Jacques E. Wegmann of Toms River Chemical Corp. will narrate Ciba Eidophor, a closed circuit color telecast.

Walter Stump of Chemstrand Corp. will lead off the second day with a discussion of "Acrilan, Acrilan 16 and their Blends." Other talks are: "Modern Continuous Dyeing Processes" by Dr. Richard Kern of Sandoz Inc.; "Rovana, Versatile New Yarn" by C. R. Sheehan of Dow; "Reducing the Felting Shrinkage of Wool" by Fred H. Steiger of Rohm & Haas; "Dyeing and Finishing Blends of Wool and the Man-Made Fibers" by J. T. Wilson of Excelsior Mills No. 4, and "Fabric Development from a Practical Dyer's Viewpoint" by J. E. Greer, of Greensboro Finishing Co.

The AATCC Intersectional Contest will be held 2:15 to 4:30 p.m. Friday.

The final day includes: "Dyeing with Vinyl-Sulfon Reactive Dyes" by Dr. H. Luttringhaus of Carbic-Hoechst Corp.; "Status of Non-Woven Fabrics in the Textile Trade" by Dr. Howard E. Shearer of American Viscose Corp.; "New Fibers from du Pont" by M. M. Christie of du Pont; "Recent Developments in the Dyeing of Verel" by Robert J. Fortune of Tennessee Eastman, and "New Color Measuring Instrument for Use by the Textile Industry" by F. J. Rizzo, Quartermaster Research. An as yet unannounced speaker from the government or the textile industry will discuss "The Textile Industry Looks Ahead."

Wool Quality Talk Given in Australia

MELBOURNE, Australia — W. A. Gunn, chairman of the Australian Wool Bureau, opened a special University of New South Wales series of lectures on wool quality, which were given by experts in wool science.

"It is logical that all members of the trade should focus their attention on wool quality and how it may be improved," Mr. Gunn said.

Dr. K. J. Whiteley, lecturer in fiber science at the University's School of Wool Technology, said the program approached the topic from various angles such as fiber dimensions, fiber substance, faults, presentation of the clip, processing techniques such as solvent scouring and the scientific improvements of wool quality (for example, shrinkproofing and permanent pleating).

During the course, it was shown that wool quality cannot be defined only in terms of diameter, length, crimping and other accepted dimensions. fiber substance must also be taken into account, Dr. Whiteley said.

Supreme Installs New 1,000 Pound Lot Unit

Supreme Skein Dyeing Corp., Brooklyn, N. Y., has announced completion of installation of two new 500-pound dye kettles, which can be linked together to provide a 1,000-pound kettle lot capacity.

The equipment, all stainless steel and electronically controlled, will increase the firm's capacity 150 percent.

According to a spokesman for Supreme, they will now be able to dye 125,000 pounds of yarn weekly.

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QUEENS' New Model "BJ" Fully Automatic, Versatile, Flat Jacquard Trim Machine . . . Priced Amazingly Low!

Because the knitwear industry wants fancier collars and trims for full fashioned and cut and sewn knitwear, Queens has developed this advanced design machine for the production of multi-colored and fancy stitch patterns.

NOTES THESE IMPORTANT FEATURES:

- Available in 4 to 12 cut, inclusive with 60" needle bed.
- With all re-usable metal "cards" and snapper plugs.
- All functions of these machines without exception or limitation can be changed and controlled while the carriage is on either end of the machine further increasing the ability to produce decorative patterns.
- Pattern control is accomplished by steel links of various heights which are easily assembled into a long wearing chain avoiding the malfunctions common in less substantial or more complex systems. Two identical pattern chains are used in our time proven short chain arrangement which eliminates the need of extremely long pattern chains.
- High and low butt needles on front and back beds.
- Short carriage construction and more rigid mounting with anti-friction ball and roller bearings.
- The variable pitch "V" belt drive fully permits simple adjustment for maximum production and an automatic dual speed drive available as a low cost accessory further improves production by permitting maximum speed with automatic slow-down for only the more difficult to knit positions such as extremely loose slack or topping courses required by the full fashion trade.
- Drop lock type knitting cams of high grade Crucible Tool Steel.
- Four stitch settings.
- Four yarn bars.
- Jacquard may be controlled on either side of machine.
- Micro-switch actuating safety carriage drive to protect against excessive needle breakage.
- Choice of two fine fabric take-up systems.
- Exceptionally rigid base.
- Needle beds of top quality steel developed for us by metallurgists of one of the largest U. S. steel mills and accurately produced on the latest type of automatic equipment.
- Now with multiple rack up to 10 needles.
- High and low butt needles and high and low butt jacks in the front bed.
- Electrified production counter.
- Investigate the advantages of these and other "Queens" models today. We offer the industry's most complete line of flat knitting machinery. Your inquiries are invited.

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Cotton Chemists Meet Sept. 28-29 In Capitol

WASHINGTON, D. C. — Technical papers on chemical treatment for cotton, particularly the structure of the cotton fiber and mechanisms of cross-linking, will be emphasized at the ninth annual Chemical Finishing Conference, sponsored by the National Cotton Council, to be held September 28 and 29 at the Statler Hotel here.

At the opening session, Frank A. McCord, director of market research, National Cotton Council, will discuss "Market Potential for Cottons with New Properties"; Giuliana C. Tesoro, head of organic research, J. P. Stevens & Company, Garfield, N. J., will report on "Chemical Modification of Cotton with Divinyl Sulfone Derivatives," and Scott H. Foster, group leader, Monsanto Chemical Company, Springfield, Mass., will report on "Application and Properties of a Durable Wash-Wear Finish on Cotton."

In the afternoon session, "Microscopical Observations on the Crosslinking of Cotton Cellulose" will be discussed by Verne W. Tripp, Southern Regional Research Laboratory, USDA, New Orleans; Rollin S. Orr, physicist, Southern Regional Research Laboratory, will speak on the "Role of Spiral Structure in Cotton," and Ludwig Rebenfeld, assistant director of research, Textile Research Institute, Princeton, N. J., will conclude the session with "X-Ray Angle of Cotton and Response to Chemical Finishing."

The morning session on September 29 will be devoted to discussion of cross-linking and creaseproofing mechanisms for cotton. The papers are: "Cross-Linking Mechanisms in Cellulosic Fibers" by D. Donald Gagliardi, Gagliardi Research Corporation, E. Greenwich, R. I.; "Changes in Cotton's Physical Properties on Cross-Linking" by Melvin D. Hurwitz, Textile Laboratory, Rohm & Haas Company, Philadelphia; "Inter- and Intra-Molecular Bonding in Wrinkle Resistant Cotton" by S. James O'Brien, group leader, American Cyanamid Company, Bound Brook, N. J., and "Catalysis of a Creaseproofing Reaction" by Hilda M. Ziifle, Southern Regional Research Laboratory.

At the final session, "Formaldehyde Treatment of Partially Swollen Cotton" will be discussed by Leon H. Chance, chemist, cotton chemical laboratory, Southern Regional Research Laboratory, and "Properties of Cotton Fabrics Treated with Fluorocarbon Combinations with Water Repellents," by Herman B. Goldstein, technical director, Warwick Chemical Division of the Sun Chemical Corporation, Wood River Junction, R. I.

Jantzen Of Canada Will Add 50% To Its Facilities

TORONTO, Ont. — Expansion of the Jantzen of Canada Ltd. plant in Vancouver will add 50 percent to facilities there.

The addition is expected to be completed in September, George W. McDonald, vice president and general manager, said.

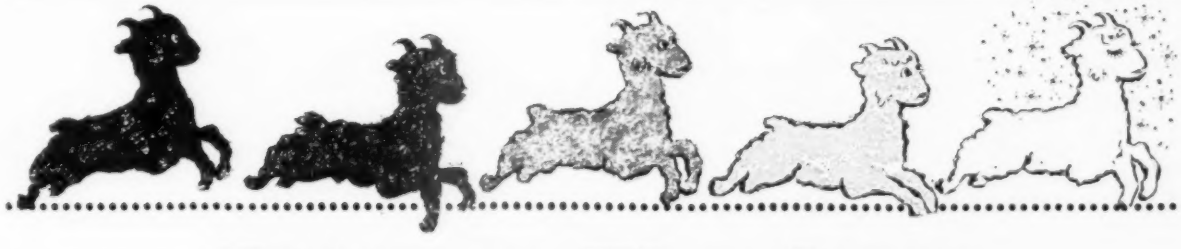
On completion, there will be internal remodeling and relocation of equipment to improve the flow of production and to provide stock facilities.

Review Of New Dyes, Equipment

(*Continued from Page 5*)

equipment are initially earmarking their installations for fine and coarse denier high-bulk Orlon yarns produced from high and low shrinkage staple on cotton system spinning equipment. Eventually it is expected that many of the firms will also use this equipment to dye wool yarns. In the past wool yarns were dyed mainly in skein form on Klauder Weldon reel-type equipment. More recently dyers have taken to processing the wool knitting yarns in skeins in the same hanging type of hank dyeing vessels in which most Turbo-processed high-bulk Orlon yarns are currently being dyed.

This new trend to package dyeing among the sweater dyers recalls the massive shift to sweater-strip dyeing made over a decade ago by many of the industry's traditional wool skein dyers, and the more recent addition of skein dyeing facilities by these specialty garment and tube dyers.



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MILPAC PERFECTS NEW PROCESS

The fur-like texture characteristic of high-pile knitted yardgoods produced on the sliver knitting principle can now be duplicated on continuous lengths of sweater-strips as a result of a new process perfected by Milpac Dyeing Co. and a subsidiary company, Knit Goods Brushing & Finishing Co., both of Brooklyn.

Called Wonder Finish, the process can produce the fur-like surface on continuous sweater-strips of any stitch construction —interlock, jersey and various rib structures including half-cardigan—and of any fiber composition. Primarily, however, it is designed for sweater-strips knitted of acrylic fiber yarns.

Milpac's new process is a combination chemical, mechanical and heat process. The chemical finish is applied by Milpac during the strip dyeing operation. Following dyeing, the sweater cloth is dryed in tumble dryers and slit into the open width. To facilitate subsequent processing, the lengths of sweater-strips are then sewn together into continuous form, with the tail and cuff at the end of each continuous cloth bundle.

After joining of the sweater-strip sections into the continuous processing lengths, the fabric is passed through a brush-like or napper-type machine to create the furry surface. This texture is further enhanced by polishing and electrifying on virtually the same type of machine used for raising a deep, plush, fur-like surface on conventionally-produced high-pile fabric.

Williams To Speak On Arnel At AATT Meeting

Dr. Robert D. Williams, manager of product development, Celanese Fibers Company, will speak on "Arnel 60 for the Sixties" at the September 7 meeting of the American Association for Textile Technology.

Dr. Williams will summarize the properties of Arnel 60, its processing characteristics and present samples of typical fabrics and applications.

The meeting will be held in the Della Robbia Room of the Hotel Vanderbilt, New York City, commencing at 6:30 P.M.

Cone Line Combines Knits, Woven Cotton

Cone Mills' spring collection is presenting coordinates that combine colored woven cottons and knitted fabrics with piece-dyes and prints.

The firm's emphasis is on bright colors — orange, pink, jade, lilac and aqua—and pastels—mauve, lime, pineapple gold and very pale beige and peach.

Yarn-dyed terry cloth is featured in high fashion colors which can be coordinated with stripes.

Cone Knit-Mates are offered in a wide selection of patterns and textured solids to coordinate with the solid wovens, fancies and prints.

Financial

White Stag Sales Up, Stock Earnings Drop

PORTLAND, Ore. — Total net sales of the White Stag Manufacturing Company for the six months ended May 31, 1960 were $11,553,133 compared with $9,928,509 for the corresponding period last year, a rise of 16 per cent.

Earnings per share of common stock for 1960, however, were 82 cents, a drop from the 1959 earnings of $1.42 per share. A letter from Harold S. Hirsch, president of the company, attributed the decline to "increased costs in the first half of 1960 which could not be reflected in the fixed selling price of merchandise until the following season."

Mr. Hirsch announced the founding during the six month period of White Stag of Canada, a joint venture, to manufacture and distribute White Stag Women's sportswear in Canada. Two new companies in Europe, White Stag of Austria G.m.b.h., Vienna, and one in Hechigen, West Germany, were founded.

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WE'RE "OLD HANDS" AT SOLVING troublesome dyeing, technical and color problems for the sweater and knit goods trade.

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Swimwear

Catalina Opens New Calif. Plant

MONTEBELLO, Calif. — John E. Watte, Jr., president of Catalina, Inc., has announced the opening of a new manufacturing unit here. The new plant, which is located at 1133 Greenwood Avenue, will be exclusively engaged in manufacturing ladies' swimwear, representing another step in Catalina's rapidly expanding manufacturing facilities.

The new Montebello unit, with 26,000 square feet of floor area, will allow an expansion of facilities now in operation in Whittier, Calif., which has two large modern factories manufacturing knitwear and swimwear. The Montebello plant will result in a sizeable increase in space for swimwear production, and release an additional 18,000 square feet of space to the Whittier facilities for knitting and finishing of sweaters.

Production at the new Montebello unit will be under the direction of plant manager John Harris. Harris has been with Catalina eight years, the past four of which he has spent in managing the swimwear operation at Whittier.

In announcing the opening of the new plant, Watte commented, "Our new swimwear plant at Montebello is part of Catalina's planned growth and expansion program, and we are continuing to build and develop our physical facilities as a means of keeping step with the rapid growth of our business."

At the same time, Catalina announced the removal of the complete Los Angeles home office facilities, executive offices, and design headquarters from 443 South San Pedro to 6040 Bandini Boulevard, Los Angeles 22, Calif. No information is as yet available on the not-yet completed new headquarters.

Rose Marie Reid Realigns Staff

LOS ANGELES, Calif. — Changes and new positions in the production and marketing staff for Rose Marie Reid were announced by Paul Haberfeld, president of the swim suit manufacturing firm. New responsibilities for several key members of the organization will start with the new season, September 1, 1960.

James White has been promoted to director of Century Plant operations. He will be in charge of the company's current manufacturing facilities. Employees under his direction will specialize in the manufacturing of subsidiary lines for Rose Marie Reid, including Marinia Del Mar swim suits and Cortina knits women's sportswear separates.

Jack Axelrod, previously sales administrator for Rose Marie Reid, is promoted to the position of marketing administrator for all subsidiary lines. Both White and Axelrod will make their headquarters in the present plant at 5200 West Century Boulevard, here.

John Liebert has been promoted to the position of marketing coordinator for Rose Marie Reid. He will act as direct liaison in the Los Angeles administrative headquarters for Nat Edelstein, vice president of sales located in New York, Haberfeld said. Liebert's responsibilities include customer relations and coordination of export marketing activities.

Tiennie Greenberg, previously customer relations director, takes the title of merchandise executive. Her new responsibilities involve all labels manufactured by the company. She includes the coordination of licensing operations among her new duties. John Fehlman, as licensee coordinator, will assist Miss Greenberg.

Lawrence Jaffee, former assistant controller, has been appointed administrative assistant to the president. Sal Latteri, who has been plant manager at Century, will become manager of the new Valley plant, reporting directly to Haberfeld.

A new post, that of product coordinator, will be filled by Steve Rands. Previously, Rands held the position of sales administrator for subsidiary lines.

Robert Carnston, as distribution manager, will direct internal operations relating to order processing, traffic and shipping for Rose Marie Reid. Joan King has been appointed to the new position of publicity coordinator for Marina Del Mar.

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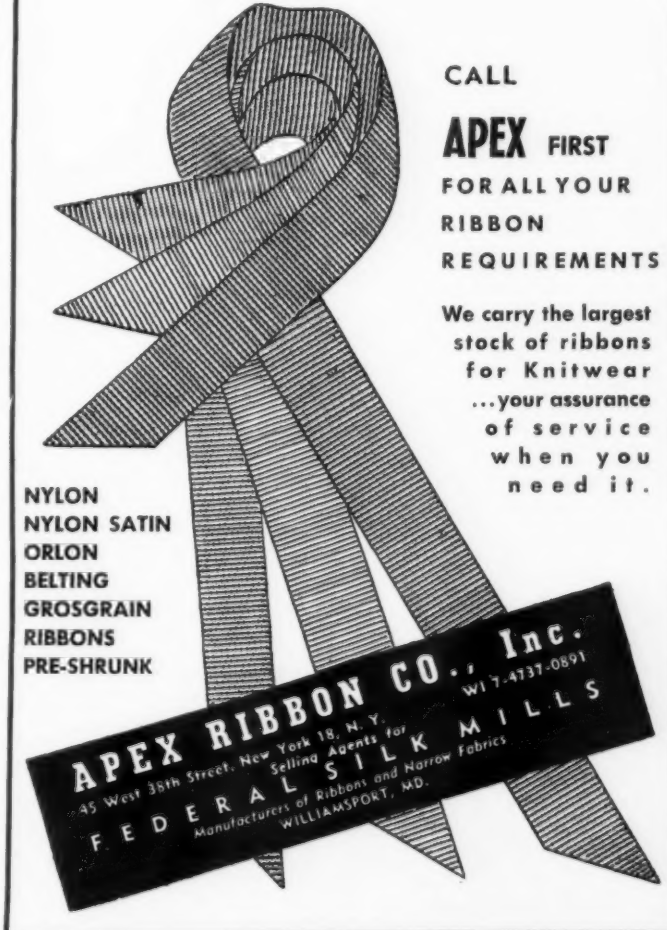

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Ladies' Swimwear

Ruby Of Miami New Swim Suit Firm In Florida

MIAMI, Fla.—Newest thing on the South Florida swim suit scene is Ruby of Miami, Inc., a company which was formed on the first of July with offices at 238 W. Flagler Street, and which will unveil its first resort and holiday line at the Southern Apparel exhibitors show beginning Sept. 25 at the Fontainebleau Hotel, Miami Beach.

While the firm is new to the swim suit scene in this area, its officers are not. They are well known in the sportswear field.

Isadore Rubin, president of Ruby of Miami, Inc. is the originator of Muriel Sportswear of Miami, which is now headed by his son-in-law, Paul Japlon. Mr. Rubin, who has been in the needle trade for 18 years, retired from active business last August but in his own words, "couldn't take it." When he made this decision, Ruby of Miami, Inc. was born. Mr. Rubin's wife, Bessie, is vice president of the new organization, and Frank Alvarez, secretary-treasurer, with Bernhard Falk, another oldtimer in the needle trade and formerly with Harmony Fashions, on hand as sales manager. The "oldtimers" set up shop in quarters formerly occupied by Frank Williamson, still another oldtimer in the needle trade in Miami.

Now in process of completing samples of its first swim suit line, the 40 sewing machines, as well as the company's cutting and other machines at the 6000 square foot building on Miami's leading downtown thoroughfare, are beginning to hum with preparations for a September deadline. During peak months about 50 persons will be employed at the new firm.

Ruby expects to create a diversified line of women's and misses' suits, coordinates and elasticized cabana dresses.

South Florida, a fast-growing area, according to recent census figures, is a testing ground for swim suits the world will wear in later months, as well as a year-round market for this type of merchandise. Its swim suits enjoy wide acceptance, even in California," according to Mr. Rubin.

Predict Big Cotton Season

A big cotton season in swimwear is the prediction of this firm, which is specializing in this material and in Arnel. Vivid prints, especially florals, Ruby executives say, are more in favor here than solid colors and their new line will feature outstandingly colorful prints. Elasticized suits are popular, too, in their estimation, especially in dressy models and some of the samples in their new line are draped and shirred jersey, combined with elasticized materials. They expect one of their best sellers to be a cotton boy leg suit, with matching skirt. They also anticipate good traffic in floral print nylon suits with elasticized inserts for bodice stretch.

For the young in years (and figure) Ruby is featuring low backs, as well as some two-piece suits, and for the firm's glamor suits, gold brocade, with matching coats.

Glamorous, indeed, are Ruby's jet black elastized suits, embroidered with matching ribbon trim design, and its all-blacks, embroidered in iridescent sequins, pearls, or white and gold braid stitched in floral pattern. Retail price range of Ruby's swim suits will be $10.95 to $29.95.

Elizabeth Stewart Opens New Swim Suit Factory

LOS ANGELES, Calif.—Production has begun at the new Elizabeth Stewart Swimwear factory, located at 7533 S. Garfield Avenue in Bell Gardens, a suburb here, according to vice president David Stewart. The factory was previously located at 1257 South Los Angeles Street in downtown Los Angeles.

Stewart pointed out that the workrooms, stockrooms, offices, etc. will now all be under one roof in the 30,000 square feet of floor space of the new building.

A new showroom, at 113 West Ninth Street in downtown Los Angeles, has also just been opened.

BELMONT THROWING CORP.
BELMONT, NORTH CAROLINA

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Swimwear

Cole Unveils New "Bare-Hug" Bikini

LOS ANGELES, Calif. — A highly promotional color theme and a "bare-hug" suit which out-Bikinis the Bikini were the highlights of a recent preview of Cole of California's initial line for cruise and resort wear.

Violet in all shades from pale mauve through and including an almost shocking ultra-violet themed the group.

Newsworthy highlight of the line was the "bare hug" suit, a two-piece model with a completely backless bra and maillot shorts, shown in printed Everglaze cotton and striped nylon fabrics.

A knit suit of Helanca was featured in another two-piece maillot with tucking to accent both the bra and the shorts; and in a one-piece maillot with curved bra-line. Another one-piece maillot was seen in nylon matelasse with deeply plunging neckline fore and aft.

Soft dressmaker styles were shown in nylon jersey—"Pompadour," a feminine suit with permanently-pleated skirt; and "Du Barry," a sculptured sheath with fluid vertical draping.

Knit Dresses

Buffalo Fashion Shop Emphasizes Knitwear

BUFFALO, N. Y. — The fashion floor of the newly opened downtown Buffalo store of Adam, Meldrum & Anderson Co. is emphasizing knit dresses and costumes in several departments. The company said it has knits for every budget and taste.

In the better dresses section the store is spotlighting Kimberly's two-piece wool knit with costume jacket, brass buttons and contrast binding, and Kimberly's wool knit dickey dress with waist deep shawl collar.

The regular dresses department featured a boucle wool knit wardrobe of one-piece dress, costume cardigan and skirt. The Junior Dress Shop offered a flat-knit wool two-piecer with brass ribbed belt on over-blouse, straight-lined skirt.

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AUTOMATIC WASHER-EXTRACTOR

SAVES 70% OF TIME AND LABOR
CUTS PROCESSING TIME FROM APPROX. 45 TO 15 MINUTES PER LOAD

Your latest development of manufacturing and processing knitted garments are not complete until you have tested, in your own plant, the delightful effects that Bill Glover preshrinking, fulling and finish bring out of natural and synthetic fibres.
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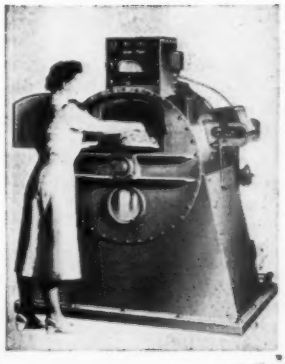

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On that shipment of sweaters
Promised yesterday,
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To clean them up quick
To beautify, soften
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KNITWEAR DRY CLEANING AT ITS BEST
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Need Help With Your Soiled SCREEN PRINTED Sweaters?
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Send us your inquiry in full detail. We'll "tailor" the Net to fit your need.

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INDUSTRIAL NET DIVISION
46 Cordier St., Irvington, N. J.

American Wool Council Announces $3 Million Advertising Campaign

A three-million dollar advertising campaign for American wool has been announced by Walter Pfluger, chairman of the American Wool Council.

More than 125 retailers have already started tie-ins on wool, including fashion shows and window and departmental displays, he also reported. Mr. Pfluger said that of 285 back-to-school retail ads half-page or more, 72.9 percent of the insertions featured 100 percent wool merchandise.

"This emphasis on wool comes at a propitious time," he said. "Domestic production on wool for 1960-1961 will reach a new peak, estimated at over a quarter billion greased pounds, 3 percent more than the 1959-1960 output."

Details of Program

The Council's program includes:

• Ads in Women's Wear Daily and Daily News Record with interview reports from leading sportswear buyers and knitwear executives on wool.

• National ads on boys' and girls' back-to-school wear and men's and women's wool-dressed day wardrobes in monthly and weekly magazines, Sunday newspaper color supplements and ROP newspapers.

• A series of ads, in which 18 leading American designers present their creations in American-made wool.

• A campaign on home-sewing with three separates combining wool jersey tops and wool skirts.

• Distribution of a retail merchandising portfolio, including sales training cards, window units, ad reprints, and pre-tested display themes.

• Correlation of all projects of existing wool promotion groups.

• Visits by 32 fashion specialists to retail stores in 40 metropolitan areas to increase the sales of all wool merchandise, assist in training sales personnel, and work closely with women's clubs, schools and other consumer groups.

All advertising is handled by Grey Advertising Agency in New York, while the Eleanor Kairalla Agency has been appointed New York coordinator on publicity and advertising for the campaign.

PTI Offers Study To Knit Mechanics

PHILADELPHIA, Pa.— Philadelphia Textile Institute in cooperation with the Wildman-Jacquard Company, Norristown, Pa., will offer a series of training courses for knitter mechanics beginning this fall, Prof. Thomas Edman, head of the Knitting Department at PTI, announced. A special short course in warp knitting design and analysis will also be offered. Each of the knitter mechanics' courses is a 3 week continuous program, 9 a.m. to 4 p.m., Monday through Friday. The first begins September 12 and will be repeated November 14 and again January 16.

The first week of each course will be spent at PTI and the second and third at the Wildman-Jacquard plant.

The course covers analysis of knitted outerwear fabrics, knitted fabric design, and the complete mechanical operation of Wildman-Jacquard TJI-12 and the LH-6 machines, with special attention given to the timing of automatic devices; electrical trouble shooting, and preparation of Jacquard pattern and control cards.

To insure individual instruction, the number of students in each course is limited to six. Applicants must present a letter of recommendation from a knitted outerwear mill that is a user of Wildman-Jacquard machines. The tuition is $100.

The short course in warp knitting and analysis will be held at the Kidde Textile Machinery Corporation, Bloomfield, N. J., on four Saturdays, Oct. 8-29, from 9 a.m. to 5 p.m. Prof. Edman will be instructor.

The course will cover the type of fabrics produced by warp knitting on the tricot and Raschel machines. Special attention will be placed on the analysis of warp knitted samples and the means of reproduction from warping to finishing. The tuition is $40.

Ladies' And Misses'

Jersey Featured By Julie Miller

LOS ANGELES, Calif. — Casual and dressy, full and slim skirts, plains and novelties are seen in jersey fabrics in the Julie Miller fall line.

Typical of the full-skirted styles in wool jersey are a number with a simple bodice accented with jeweled buttons in front and floral embroidery and tucked detailing in the back, and in a three-quarter sleeved style with a leaf pattern appliqued on both front and back of the bodice.

Pleats are seen in some unusual styles such as a skirt which combines both box and accordion pleats, complemented with a collarless top with three-quarter dolman sleeves and self buttons, and a skirt featuring back fullness and a single flat box pleat in front — also featuring a collarless front-buttoned bodice with three-quarter sleeves.

In the dressier fashions, Julie Miller shows a basic jersey sheath topped by a cropped double-breasted tweed jacket, and an interesting basic black sheath with long, cuffed sleeves accented with rhinestone buttons, the buttons repeated as highlight on the jersey belt.

A novelty jersey in a tweed effect was utilized in a three-quarter sleeve princess sheath with jewel neckline and gold nailheads on the bodice.

Syracuse Store Uses Vigorous Dress Ads

SYRACUSE, N. Y. — Knit dresses for women, being merchandised in three different departments at Dey Bros. & Co., have been the subject of vigorous newspaper promotion since mid-July, the latest half-page ad calling attention to the new collection in the second floor Designer Shop.

Illustrated were a wool knit sheath with lined cape collar and contrasting stripe trim, sand with green, by Anita Modes, at $39.98; a three-piece wool knit checked ensemble, charcoal with pumpkin, black with green, by Kimberly, at $55; and Cortina's two-piece flat wool knit, with jacket trim of contrasting stripes, black with clay, pecan with oxford, at $59.98.

"There's evidence of much more interest in knit costumes this fall all along the line," comments Leslie Carter, Designer Shop buyer who selected merchandise for display in four of the store's Salina St. windows to tie-in with the newspaper copy.

Koldin's two-piece zephyr wools in regular and half sizes, at $19.98 are expected to be "best sellers" in the second floor dress department, as are Kimberly's one-piece flat knit sheath at $55 and three-piece wool knit costume with chanel type jacket at $59.98. All were advertised during the summer's hottest weather.

Also highlighted early in the pre-season promotion and "very well received" was a two-piece Orlon model with jewel trim, available in both regular and half-sizes at $10.99 in the store's basement dress department.

Girls' Sweater Sales At Addis "Fabulous"

SYRACUSE, N. Y. — The Addis Company's 16-page full color back-to-school catalog is doing a good job selling girls' sweaters, according to Mrs. Rae Dizazzo, buyer.

"Of course, we started to show the merchandise in the department a week or ten days before the mailing," she reports, "and that helped the customers when they received the catalog."

Commenting that the sweater business is "just fabulous," Mrs. Dizazzo reports re-ordering three times within a week after the mailing on Regal's bulky Orlon cardigan with mock cable front panels.

Also "very good" at The Addis Company, and pictured in the mailing piece, are Regal's brushed Orlon tomboy sweater with two pockets; Burney Epstein's brushed Orlon pullover; a bubble stitched bulky and bulky Orlon with striped front and solid color back, both by Newport.

New Albany Knit Store

ALBANY, N. Y.—The Holiday Shop has been opened at 44 South Pearl St., featuring women's sweaters and other knitted outerwear.

The *Important* Factor....To Remember

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Factors

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SPECO SERVICE, RELIABILITY TECHNICAL ASSISTANCE

SOAPS SOFTENERS DETERGENTS

SPECONYL B — a new scouring and leveling agent which increases light fastness up to 50%.
Also increases wash fastness.

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INDUSTRIAL CHEMICALS
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Ladies' And Misses'

Sweaters Popular In All Age Groups, Calif. Buyer Finds

PASADENA, Calif.—Everyone's ideas in clothes are getting younger," according to assistant buyer Jeanne Salisian of F. C. Nash and Company's five sportswear departments for women. Customers of all types are purchasing and wearing sweaters in all styles and yarns, she says.

The bulky knit, a recent arrival, is selling largely in cardigans in Orlon combinations. White is the most popular color for all age groups.

Mrs. Salisian feels that bulky knits are an important addition to teen age and college wardrobes, but not a replacement for cashmere and other sweater yarns. Although hot weather has slowed down sales of bulky knits in some styles, Sweetree cardigans with push up three-quarter length sleeves already have sold out in many styles and sizes.

The college trade, which buys heavily in Whittier, Pamona, and Pasadena, the company's main store, has been requesting bulky knit cardigans in all styles and colors, and stocks are out in the popular youthful sizes.

Sizes of 44 and up are so much in demand that Nash's are stocking these as a part of both the teen age and the matron trade. The Matrons do not seem to care for the collars on cardigans, but the younger crowd does.

Other heavy sellers, especially in the three college towns, are the Shetland yarn styles in all colors, particularly white.

Strasser Joins Premier As Head Of Swimwear

Sunwear, Inc., division of Premier Industries, will be headed by Chester A. Strasser, who joined the company as vice president.

Sunwear, Inc., produces and imports beach accessories, rubber bathing caps, beach bags and other similar objects.

Mr. Strasser was formerly sales manager of Darlene Knitwear, Inc. Previously he was with Colebrook Knitwear, Inc.

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Clips is our business and has been for over 20 years. We recommend the right sizes and clips for your garments and demonstrate their proper use.
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TEXTILE PACKAGING DEVICES
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A SPECIALIZED BUSINESS WITH SPECIAL SERVICE

Men's And Boys'

Michaels Calls For New Jet Age Sales Technique

FRENCH LICK, Ind. — Arnold Michaels, president of the National Association of Retail Clothiers and Furnishers, speaking at the annual convention of the National Association of Men's and Boys' Apparel Clubs, called for new manufacturers salesmen techniques, to keep up with the jet age buying trends which have been influenced by the impact of shopping centers, discount houses, chain operations, and horizontal and vertical manufacturer - retailer organizations.

Michaels said that while the number of stores has not changed, the number of owners of these stores has decreased by over 10 percent.

Today's price levels are so high, and profits so low, that there must be increased productivity to justify larger earnings for the salesmen, according to Michaels, who is definitely opposed to any cost increases which will raise prices to the consumer. "One way manufacturer's salesmen can justify their economic existence, and assure themselves of the increased income they expect," Michaels said, "is stop being mere order takers and become sales promotion experts."

"We need ideas on selling rather than just merchandise. The future salesman will have to follow through after the order has been taken and delivered. This means following through as relates to delivery of goods, proper display of goods, checking of stock, procuring of advertising money on hot items, and suggestion of effective advertising and other sales services. We need salesmen to analyze our operations to fit in with their merchandise."

New McCurdy Manager

ROCHESTER, N. Y.—John Montanye has been appointed divisional merchandise manager of fashion apparel, including knitwear, at McCurdy & Co. department store. He has been a merchandise manager for the last six years for The Globe in Scranton, Pa.

NEW REVOLUTIONARY METHOD OF CUTTING SWEATERS!

EXTREME ACCURACY AT A FRACTION OF YOUR PRESENT COST!

CUTS—wool, cotton & synthetic fabrics

—fine gauge and bulkies

—up to 36 plies at one time

—bodies, sleeves, pockets, etc.

OPERATES ON HYDRAULIC DIE CUTTING PRINCIPLE

Used by leading European sweater mills for over 10 years

Can be operated by semi-skilled help

Maximum safety features built in

Minimum maintenance necessary

No vibration—no noise

You are invited to see this machine in operation at no obligation to you

MONTROSE SUPPLY & EQUIPMENT CO.

division of Montrose Oil & Belting Co., Inc.

EXCLUSIVE DISTRIBUTORS OF SANDT DIE PRESSES FOR THE KNITWEAR TRADE

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Specialists in:

- cashmere
- camel's hair
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- fur fiber blends
- angora blends
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All three under the same roof

WINONA TEXTILE MILLS, INC.

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for better quality...better service

Consolidation of skills in all phases of the woolen spun system enables us to meet your requirements exactly . . . without deviation.

Continuous research to develop new methods, new blends, plus the most modern high speed machinery for large capacity production are your assurance of complete satisfaction here at W-W-C.

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MAdison 2-5777

Knitted Yardgoods

Princeton Mills Plans Expansion, Promotes 3

Appointment of top executives and a broad expansion program in men's, children's and women's wear has been announced by Princeton Mills.

Elliot Doft has been appointed executive vice-president with responsibility for general administration and for coordinating marketing and sales with production at the company's two major plants in Watertown and Waterbury, Conn. He was formerly assistant to the president. Samuel Silverman has been named vice-president in charge of Marketing. He was formerly marketing director. Irwin Needle has been named director of styling and fabric development.

Commenting on the expansion, Max Doft, president, said:

"Our men's wear business has been increasing particularly with development of Princeton's Astrotex—in a wide variety of knits bonded to ScottFoam, a new foam insulant. Novelty fabrics have also made an important contribution. Our current leader is Simba, a leopard pattern for women's coats and sportswear almost identical with the natural fur. We expect that our changes will also improve our service to customers. By organizing sales departments in specific product groups and by closer coordination of manufacture and merchandising, we can be more sure that our fabrics reach our manufacturing customers well ahead of the seasonal needs."

Army Contract Awarded

PHILADELPHIA, Pa.—The Military Clothing and Textile Supply Agency has made an award under QM-35 for wool and nylon knit glove inserts, dark brown and gray, to Gloversville-Continental Mills, Inc., Gloversville, N. Y., for 76,720 pairs at $ .769-.787, for a total value of $59,122.42.

Talcott Gives Dividend

Directors of James Talcott, Inc. today declared a regular quarterly cash dividend of 40 cents per share on the common stock, payable October 1, 1960 to stockholders of September 15, 1960.

ED LEVI

Levi Joins Inwood Mills

Ed Levi has joined Inwood Knitting Mills, Inc. as sales manager.

Mr. Levi was previously associated with Fair-Tex Mills for four and a half years. Prior to that he was connected with Granite Fabrics for 17 years.

Son For Larry Goldstein

A son, to be named Richard Evan, was born to Mr. and Mrs. Larry Goldstein on August 11. The father is an executive with Hope Knitwear, Brooklyn.

Knitters Using 'Sanitized' For Anti-Bacteria Finish

More than 800 manufacturers are now using the anti-bacterial finish, "Sanitized" which is applied in the manufacture of knitwear as an antiseptic barrier against deterioration and odors.

The product, known technically as a bacteriostat, is licensed for use by Sanitized Sales Company of America, Inc., to manufacturers who agree to abide by the company's quality control and merchandising programs. Among its companies in the program are M. Lowenstein & Sons and Consolidated Bleaching Company.

Sanitized is invisible, odorless and non-toxic. The only way the consumer can tell its presence is by the label.

Rochester Store Pushing Cotton For Coed Wear

ROCHESTER, N. Y.—Sibley, Lindsay & Curr department store is promoting cotton knit separates for campus wear this season.

The soft, warm cotton knits feature distinctively patterned tops and tapered ski style pants in matching solid colors.

HAVE YOU HEARD?
WE'RE NOW MAKING
FASHION COLLARS
For Men's, Ladies' and Children's Garments
QUALITY COMBED & CARDED FABRICS
SINGLE & TWO PLY

"As modern as the fabrics we produce"

• 64 & 96 *feed stripes* • 32 & 96 *feed pattern wheel* • *automatic stripes* • *tuck bars* • *rib & jersey*

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300 W. 24th St., Charlotte 6, N. C. FRanklin 5-4406
Lawrence Levy, *President*
"WE DELIVER 'YESTERDAY'"

Children's Knitwear

(*Continued from Page 1*)

Most of the market observers who were consulted felt that inventories in infants' and children's knitwear might be somewhat lighter than usual, production having been discouraged by the reluctance of buyers in the earlier months of the year. Because initial orders were somewhat delayed, reorders will also be correspondingly deferred to a later point in the season, but it will be too late to make up for lost production. Prices, which are at about the same levels as last year, have been firm.

Although everyone in this branch of the industry feels that the break they have been waiting for in buying activity has come and there has been in recent weeks a brisk stepping-up of market tempo, the increased volume is spread over a considerable diversity of types.

Fashions Colors Evident

Time was, some recalled, when staple numbers so predominated that inventory accumulations were considerably less hazardous. But today, the manufacturing problem has been aggravated not only by uncertainty as to the degree of preference which buyers would show for shaggies, bulkies, particular fibers or style types, but also by the appearance of fashion colors. This is the first season when emphasis appears to have been placed so strongly on fashion shades. Plum, lilac and stone shades are popular, and lighter varieties in the same tone families are being shown in the holiday line.

There was general concurrence that demands for advertising allowances for store catalogs had substantially declined and that many buyers were coming to accept as a business fact the policy against discriminatory advertising allowances which the Infants' and Children's Wear Group of the Association had been particularly active in advancing. This is so not only with respect to buying offices, but also larger stores. Such requests, however, are not altogether absent. Some large buying organizations are still persisting, but it is generally agreed that they are fewer in number and that the pressure is not as great, the effort having lost respectability.

Now Spinning . . . for Prompt Delivery

TURBO ORLON® ACRYLIC MARL

ALL COLORS . . . ON CONES.

Delaine WORSTED MILLS, INC.

GASTONIA, N. C.

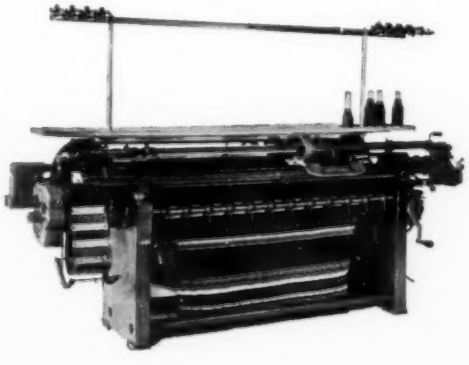
FAWNTEX YARNS INC.

KNITTING YARNS

Woolen Spun

ORLON® ACRYLIC — FUR BLENDS — LAMB'S WOOL/ORLON — WOOL — MOHAIR BLENDS

300-322 BUTLER ST., B'KLYN 17, N. Y. • MAIN 5-2700, 1913



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63" Needle Beds also available

Additional needle space for more economical production of trimmings and garments.

Built in 3-14 cut.

MODERN — VERSATILE — EASY TO HANDLE

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Couturier Reports

Versatile Bulkies Top Monsieur X's Paris Show

PARIS — Bulky knits are topping fashions here and coming to the U.S. Versions of a stocking cap in the collection of Monsieur X will be available this fall in the U.S. in Orlon Sayelle Du Pont's new bulky yarn. The caps, with and without pompons, match costume trim or bulky knit overblouses or coats. Matching stoles and coats and jackets with bulky knit sleeves were also displayed at Monsieur X's show.

Some of the hats are in gigantic ribbed stitch, including a toboggan style cap with turned-up band. Others are in heavy cable stitch. They are high and pointed, Cossack-inspired, and fit over the beehive hair style. Braided yarn makes another hat, topped with a pompon. Entirely different is an open mesh knit over woven strips of leather or satin ribbon in modified dome shape.

These hats are shown with costumes for street, afternoon and cocktail, some with knitted trim, some plain. The toboggan design is in white, matching a big white turnover collar. Other colors are deep beige, black, navy, and a purple and green with an off-black tint.

Birmingham 'Fashion Time' To Boost Knits

BIRMINGHAM, Ala.—Knits are expected to play an important part in the city's annual Fall Fashion Time in Birmingham, August 22-27, an all-out fashion effort on the part of 16 downtown merchants who plan to spend approximately $50,000 on this year's event.

Fashion shows, dinners, luncheons and teas will be featured throughout the week, and leading designers will be guests in participating stores. Interior and exterior displays will be built around fall fashions, with emphasis on knits in casuals, costumes, and dresses.

Wool blends which began to accelerate in sales two years ago, are outselling all other combinations in knitwear lines, buyers here report. In fact, a buyer for a leading downtown department store has had such a run on her wool and wool blend cardigans that she fears stocks will be depleted before fall fashion time begins!

There appears to be a swing from bulkies to flat knits, merchants say.

Purple is tapering off in a color-popularity poll here for knits, while greens, blues and browns are coming up strong. There is a slight trend towards longer length sweaters here, expected to accelerate with fall fashion time, but strictly for casual wear, buyers agree. Regular length cardigans are still top favorites. The Brevis (shortie) cardigan is picking up some sales. The cardigan outsells other knitwear styles, two-to-one in this area, merchants said in conclusion.

World-Wide Designs In New Munsingwear Line

MINNEAPOLIS, Minn.—Munsingwear's new fall line of sweaters includes original designs from the fashion centers of the world, according to Clyde Peterson, advertising manager.

The styles currently most popular are the high V and the bulky knits, Peterson pointed out. Shawl collars also are expected to continue as big sellers and six-button cardigans are equally in demand.

Most popular fibers are 100 percent lamb's wool and combinations such as lamb's wool and Orlon and lamb's wool and mohair. Colors which are getting the nod of store buyers include grape, olive, sage green and gold.

Munsingwear's "Grand Slam" golf shirt with the penguin trademark continues to be a "best seller," according to Peterson.

Father and son combinations also are a special favorite among Munsingwear customers, Peterson said, with nearly all styles available in both men's and boys' sizes.

15th Anniversary For Aberfoyle House Organ

PHILADELPHIA, Pa.—"Cotton Tales," the plant publication of Rex Mills, Gastonia, N. C. subsidiary of Aberfoyle Mfg. Co., here, is having its 15th anniversary this month.

The publication carries activities of the community as well as of its employes, plus a variety of announcements.

DUBIED

FULL AUTOMATIC MACHINE WITH TWIN CARRIAGES

Needlebeds in 2 sections of 24", 30" and 34" width each.

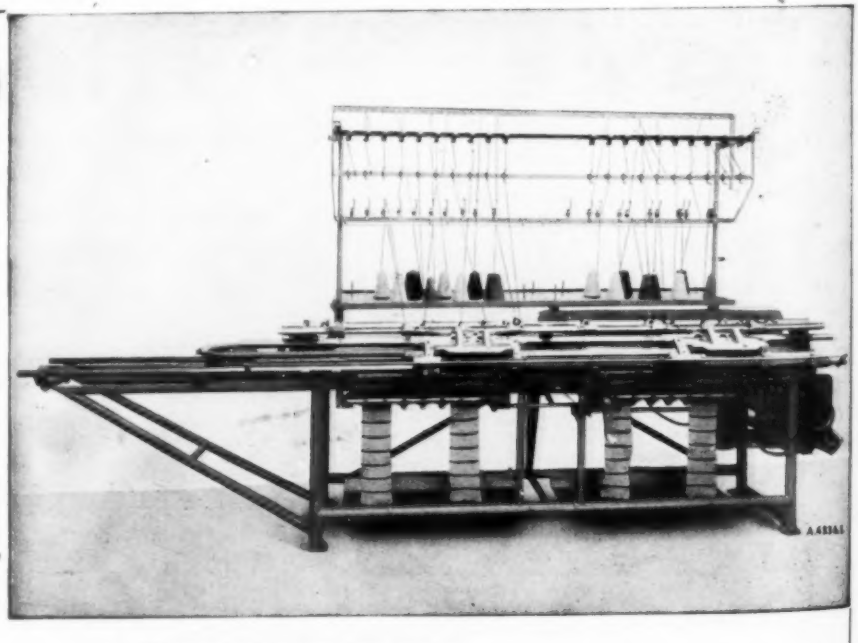
HIGH PRODUCTION MACHINE FOR FANCY TRIMMINGS, COLLARS OR RIBBED BOTTOMS AND CUFFS.

Minimum loss of floor space.
EASY AND ECONOMICAL TO OPERATE.

Direct threading of yarn from tension to feeders.
PIECES OF UNIFORM LENGTH. REGULARITY OF STITCHES.

Two-speed motor for knitting of loose course.
SECURITY OF KNITTING. LESS STRAIN ON WEAK YARNS.

D B — with high and low butt needles.
D S B — with independent high or low butt selection.
D R B — with independent high or low butt selection and stitch transfer from front to rear and from rear to front.



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Wyner Is Purchased By Ames Textile Co.

(*Continued from Page* 1)

complete line of worsteds, wool, synthetics, cottons and new developments in novelty fabrics. The company's famous Sag-No-Mor trade name, established more than thirty years ago, will be retained.

Ames Stevens, Jr., vice-president of Ames, said that I. A. Wyner will continue as president of the Wyner firm which will operate as a wholly-owned subsidiary. Mr. Stevens will be executive vice president and treasurer of Wyner.

Ames, which has been in business since the Civil War, has three plants in Massachusetts, two in Maine and one in Georgia, and has an annual volume in excess of $20 million dollars. Wyner, founded in 1916 by Mr. Wyner and his brother Rudolf, has two plants, one in Massachusetts and one in North Carolina and does an annual business of more than $5 million.

Wyner plans to increase its production of men's wear. Up to now the firm has concentrated on fabrics for women's garments.

Dallas Sports Knitting New Athletic Goods Firm

DALLAS, Texas — Dallas Sports Knitting Co. has been organized here by William B. Pitman of Charlotte, president and treasurer; his wife Ruth, secretary, and Ernest R. Warren Gastonia attorney.

The new firm has set up operations in a 10,000 square foot building at 80 Jenkins Street, with equipment partially acquired from Carolina Sports Knitting Co. at Florence and Jefferson, S. C., which the new firm has acquired.

Claude M. Weddington, who headed Carolina Sports Knitting, has joined Dallas Sports Knitting as vice president in charge of sales.

Dallas' production will be confined to knit goods for the athletic trade. The firm expects to provide eventual employment for 85 to 100 persons.

New Scranton Knit Shop Opened For Teen-Agers

SCRANTON, Pa.—Featuring sweaters and other knitted outerwear for teens and juniors, The Deb Shop has been opened at 426 Lackawanna Ave.

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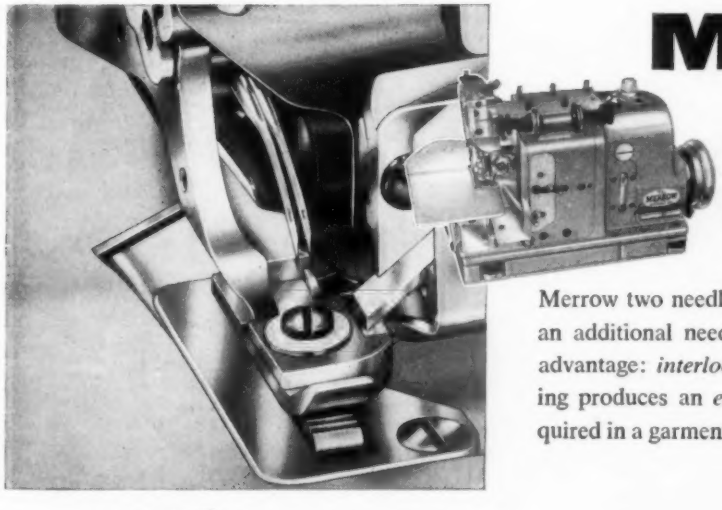

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New FTC Ruling Strikes At Buyer

(*Continued from Page* 1)

the Grand Union case is that the Federal Trade Commission proceedings against the respondent were not brought under the Robinson-Patman provisions at all. The case against the buyer was grounded on the Federal Trade Commission Act, which is one of the anti-trust statutes. This enactment first created the Federal Trade Commission in 1914 and provided in its now-famous Section 5 that this agency was empowered to prevent "persons" (buyers or sellers) from using "unfair methods of competition."

The Federal Trade Commission held here that a buyer is guilty of breach of Section 5 of the Federal Trade Commission Act when it knowingly induces a seller to yield a discriminatory advertising concession of the kind interdicted by the Robinson-Patman Act.

In the Grand Union decision, the Federal Trade Commission relied upon the fact that it had been given broad powers for defining what constituted unfair trade practice both within and outside of the field of conduct affecting monopolies and restraint of trade. The Commission did not, of course, deem itself limited to the concepts of unfair competition originally contemplated by Congress when it passed the Federal Trade Commission Act in 1914. These concepts have been broadened by subsequent developments, among them the Robinson-Patman Act of 1936. The FTC therefore held it within the spirit of the law, though not with the letter of the Robinson-Patman Act, that the knowing inducement of advertising allowances by a buyer was an unfair trade practice. On this basis it issued its restraining order against Grand Union by a split decision of four to one.

Taking issue with Grand Union's argument that Congress deliberately exempted from the reach of the Robinson-Patman Act the inducement of advertising allowances, majority opinion rendered by Commissioner Robert T. Secrest stated, "We think that the most that can be said on this point from the legislative history and from a reading of the Act itself is that the practice charged in the complaint is not specifically prohibited by the Act. Certainly, it cannot be inferred . . . that Congress countenanced a practice which so clearly violates the spirit of the statute."

The opinion went on to say:

"The history of the Robinson-Patman Act discloses that one of the evils on which the legislation was directed was the use of enormous purchasing power by large buyers to obtain from their suppliers discriminatory concessions in the form of advertising allowances." If Congress did not specifically use language prohibiting the inducing of discriminatory advertising allowances, it was not because it intended to sanction these, but only because it made specific mention of a few favorite devices used by large and

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powerful buyers to exact special advantages against smaller competitors, and it was such abuses in the chain store field that largely provoked this legislative action.

The Grand Union case is regarded by some as possibly indicating the attitude of the Federal Trade Commission when it considers the proceeding now pending against R. H. Macy & Company for having induced its suppliers to pay a thousand dollars each toward Macy's promotional sales in connection with its 100th anniversary. The complaint against Macy's was also based on violation of Section 5 of the Federal Trade Commission Act, the inducing of these grants having been deemed an unfair trade practice particularly in view of the power which Macy's wields in the market and the general inability of smaller suppliers to resist such demands.

The facts in the Grand Union case were briefly these: Grand Union made arrangements to have an advertising agency solicit advertising from its suppliers on a "combined electric spectacular and animated cartoon display" located in the Times Square area of New York City. Each of the suppliers agreed to pay a thousand dollars for having its product featured for one minute in each twenty-minute interval of advertising, which was coupled with advertising of Grand Union. The chain store itself helped obtain the participation of most of the 30 companies that yielded to this solicitation.

There was no serious question over the fact that the mere use of an advertising agency as an intermediary did not insulate the respondent itself from the infraction of law. This element of the case is significant for its bearing on similar use of advertising agencies in the ready-to-wear field for the solicitation of contributions to store catalogs. This device will not, the Federal Trade Commission said, prevent responsibility from being imposed where it belongs, namely, on the buyer who brought about the arrangement.

The dissent by one commissioner, Edward T. Tait, in the Grand Union case, rested on the view that recourse to the "spirit"

(*Continued on Page* 84)

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Deadline for Space Reservations: September 26, 1960
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Knitted Outerwear Times
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Ladies' And Misses'

Cleveland Co-Eds Express Affection For All Knitwear

CLEVELAND, Ohio—Betty co-ed will make knits her chief round-the-campus wardrobe love if interest shown at back-to-school shows is manifest at colleges this fall.

Major downtown department stores, paced by May Co., Higbee and Halle, showed a wealth of fashion interest in back-to-school clothes this fall especially in the campus or sports type sections. Sweaters in soft cashmere-like knits, or those with a bulky look, will be included in virtually all college wardrobes this fall. Separates, with a finished look, proved very popular in the shows.

Sterling Linder has opened a new knit-shop and offered a wide range, including flat Italian type knits. Halle Bros. showed the Kimberly sweater set with much interest. There was "much flair, less care" and Orlon held a heavy demand throughout the area.

Pullover Interest High

The pullover seems destined to soar to unmatched heights with suburban co-eds providing the leading purchasing power. Knubby knits, relaxed necklines and controlled bulkiness, attuned to atumnal tones, are scoring well. A wool pullover with the look of boucle with wide sleeves rolled up to the elbow caught much fancy, along with a roomy rib-knitted pullover in brilliant fall colors that made for mother's gift to back-to-school daughters.

Orlon Interest High

Orlons continue to show well. Matchmate coordinates in medium price ranges were especially popular both in shows and in sales. Blends of 55 percent Orlon acrylic and 45 percent wool appeared to be the better sellers, although other blends held firm, too.

Halle Bros. spelled its show in "lively, bold and bright" college fashions hailed as "best of glamour." Newspaper advertisements keyed the return-to-school move.

Glamour Knits Stressed

Higbee Company boasted of "This is the Look" and emphasized "Darvan yarn, in the most luxurious sweaters Exmoor ever made." Higbee highlighted a "back-to-school sweater in a new lusciousness, a more natural feel" and moved units ranging from a $6.50 classic short sleeve pullover to a ribbed slipover with collar at $8.98. Violet, teal blue, heather, grey heather, green heather, camel, spiced copper were all in the collection.

Classic cashmere sweaters from $13.90 to $17.90 in many colors also were offered, along with "Garland college sweaters" with its Angora pullover through flat wool knit with Johnny collar.

Sweaters highlighted the May Co. fashion shows featuring return-to-campus wearing apparel. Produced by Pat Ferko, fashion coordinator of the May Co., the show was presented in all May Company Greater Cleveland stores. The entire knit goods industry captured scintillating honors in the department store presentation of campus apparel.

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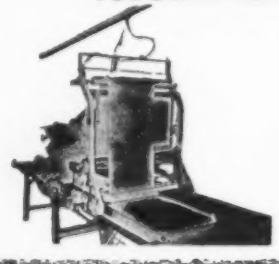
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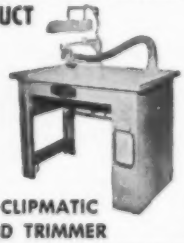
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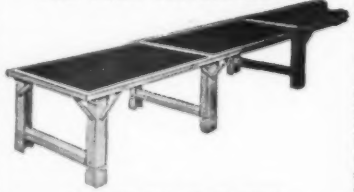
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INDUSTRY'S MAIL CHUTE

Editor
KNITTED OUTERWEAR TIMES
Dear Sir:

It is always a pleasure to read the informative and highly instructive papers about warp knitting presented by A. Reisfeld. However, in reading his latest article, "Fundamentals of Warp Knitting" (KNITTED OUTERWEAR TIMES, August 8, 1960), one can hardly overcome an uncomfortable feeling that the advantages of the warp knitting system are somehow too strongly emphasized in comparison with its poor cousin, the weft knitting system. Some points of comparison which are objectionable in our opinion are:

UNFAIR CRITERION OF MACHINE PRODUCTIVITY—It is not fair to compare the number of loops formed per minute on a tricot machine with 28 needles per inch and on a circular machine with 20 needles per inch, despite the fact that these are indeed the average gauges for the respective types. The result may be of high interest to the mathematician and to the technologist. But the plant manager and the economist would ask: How much cloth, expressed in square yards or pounds, can I get in one minute? The answer to this question reverses the result radically in favor of the circular machine.

MACHINE SPEED ON PATTERN WORK — Circular machines of the pattern wheel type have the same speed as the 96-feed plain jersey machines. This is achieved because the cam angle is 50° instead of 54° on the latter type. No speed reduction is necessary for any pattern whatever. There is not even a standard provision for speed reduction, while every modern tricot machine does have this provision through a special motor. We may ask: Is it possible to maintain an operating speed of 1,100 rpm. by patterns with an underlapping under three or four needles?

It has to be said that there is a drop in productivity on circular machines by certain patterns because not every needle is actually knitting on every feed and on every revolution. Isn't it the same case on tricot machines when one guide bar is working floats for a number of revolutions? Doesn't the productivity on tricot machines drop to less than half the normal when cut pressers are employed?

There certainly is a higher circumferential speed possible on some single-purpose plain jersey machines, the same as is the case on single-purpose tricot machines with pattern disks instead of link chains.

ASPECTS FOR THE FUTURE—Mr. Reisfeld anticipates an everlasting boost of productivity for tricot machines through further increase of the working speed. Previous studies predict that in the future machines may operate at a soaring 3,000 rpms. On the other hand, he sees the status quo on circular machines just a little short of being the last and final state in technical development, at least concerning output and possibility of having more feeds per inch of machine circumference.

But isn't the idea of individual needle-lifting jacks a new and revolutionary one, not at all impracticable and impossible? Isn't it feasible to reduce substantially the angle of the needle cams from their present 54° just by elongating the leverage of said lifting jacks and thus allowing both an increase in speed and in feeds per inch? And there are more ideas!

The technical difficulty is the same as it is in a further development of tricot machines, namely to find ways and means to enable "the machine assembly to function correctly and impart motion to the knitting elements with the requisite precision."

CIRCULAR WARP MACHINES —The construction of circular Milanese machines (Maratti, etc.) has been undertaken spasmodically for the last few decades. They never were a real success, although the fabric produced on them is indeed of a superior quality, especially concerning elasticity and resilience. They replaced (I quote) "the cumbersome multitude of individual yarn packages . . ." and what was obtained instead is a really cumbersome way of operating in addition to an awfully toilsome way of correcting even a small press-off.

LIMITATIONS IN SCOPE ON INDIVIDUAL MACHINES—There

certainly exist highly successful single-purpose weft knitting machines, just as single-purpose warp knitting machines. But we also have multi-purpose circular machines. For instance, those of the pattern wheel type or peg drum type with a tremendously wide range of pattern possibilities, at least equivalent to any machine of the warp knitting type.

The same machine, i.e. an 18-cut machine, with the same yarn, i.e. with 16/1 cotton yarn, can produce commercially acceptable fabrics from less than four oz. per square yard to more than 10 oz. per square yard. In the lighter category we could mention such different end-uses as lining fabrics and men's shirts in eyelet construction. On the heavy side, winter jackets and napped blankets! All produced on the same machine and with the same yarn! There is no limit in use of fine yarn in combination with coarse boucle or other fancy yarn on the same machine. The coarse yarn could be as thick as 4/1 cotton yarn on an 18-cut machine.

DOWNTIME FOR PATTERN CHANGES—To change a pattern on a Model ROF machine with 32 wheels takes less than one hour. If striper boxes are involved (by the way, a pattern possibility which no warp knitting machine can match), it will take somewhat longer. On the new Morat and on the Lebocey machines the change of pattern wheels is indeed a matter of only a few minutes. On the other hand, how long is the preparation time and actual machine downtime on a tricot machine if another threading is required? Isn't it sometimes a two-man job to fit a long chain on a three-bar machine? Not to speak of changing an 18 or 24 bar Raschel machine to a large floral pattern. Are two full work days enough for this operation?

BASIC STITCH FORMATIONS—An unlimited variation of stitch combinations can be performed on almost any type of weft machine with the three basic stitch formations: knit, tuck and welt (or plain, tuck and float). The warp knitting machine is restricted to only two of these stitch formations: plain and float. No tuck stitch formation can be created.

To our knowledge, there have been two attempts to introduce tuck stitch formations on tricot machines: The jacquard tricot machine of Ernst Saupe on which individual needle pressers could be selected at random, and another idea developed by Otto Engelhardt (now with Native Laces, N. Y.) on an experimental machine on which the whole press bar acted only on every other revolution. Neither type was of any commercial success.

Elongated loops of the terry-cloth type and many other adaptations, of course, can be found on both the warp and the weft type machines.

We feel, generally speaking, that there is no need at all to draw a competitive comparison between warp and weft knitting. Both are independent kingdoms, rich, wealthy, with immeasurable technical resources waiting to be explored and exploited by the imaginative designer and technician.

However, there is one common basic need in both fields, so correctly outlined in Mr. Reisfeld's introduction: To fill the lack in adequate literature. It certainly would be a rewarding challenge for KNITTED OUTERWEAR TIMES to encourage publications about weft knitting as they do so successfuly for the warp knitting branch.

THEODORE HIRSCHHORN
Kenwood Knitting Mills

(Editor's Note: On the final point of Mr. Hirschhorn's letter, we voice a strong dissent. There are few publications in the world —none in this country—which devote as much space to articles on various aspects of weft knitting as KNITTED OUTERWEAR TIMES. *Soon to be undertaken by the National Knitted Outerwear Association, publishers of this newspaper, is an extensive book publication program on weft knitting as a follow-up to the four books recently issued under NKOA label on Raschel knitting.)*

N. Y. QM Group Meets

The New York Chapter of the Quartermaster Association will hold its annual election meeting Saturday evening, September 17, at the Officers' Club, Fort Hamilton, Brooklyn, it was announced by George Waldes, chapter president. The meeting will be followed by a cocktail party, buffet dinner and dance.

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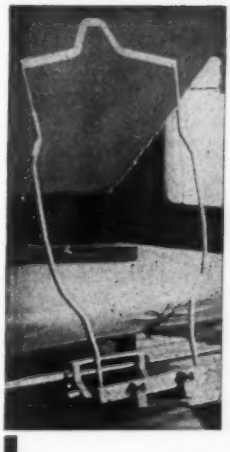

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FTC Ruling Strikes At Buyer Pressure

(*Continued from Page* 79)

of the law was too vague a concept to justify this expansion of the use of Section 5 of the Federal Trade Commission Act. Also, he argued that it had the effect of making the condemned acts per se violations of the anti-trust laws without the further necessity of showing their effect to be to tend toward the creation of a monopoly or the restraint of trade.

Although no announcement has yet been made as to whether an appeal will be taken, it is deemed likely that the issue will be carried to the courts.

Mill News

McGregor Appoints 5 To Regional Staff

Five new associate regional sales managers have been appointed by McGregor Doniger Inc., it was announced by Peter Hammond, general sales manager. The appointments are part of the expansion of McGregor's national sales organization.

Those named are:

Ben Rosenbloom, assisting Vaughn Collins, regional manager, Detroit, covering Michigan, Kentucky and Ohio; William Hammond assisting Gus Van Sant, regional manager, midwest.

Also Howard Rosenberg, assisting Norman Ellison, regional manager, Washington, D. C.; Henry Bass, assisting William Preston, regional manager, Oklahoma City; Joe Carpin, assisting John Newell, regional manager, Atlanta.

Kandel Mills Opens Its First Retail Shop

PORTLAND, Ore.—Kandel Knitting Mills has opened its first retail shop in the new multi-million-dollar Lloyd Center here. The shop will feature the company's sweaters for men and women and coordinating skirts for women.

Walter Kandel, owner, regards the store as a pilot operation to test new styles.

INDUSTRY'S MARKET PLACE

Advertising rates: 5.50 per column inch per insertion. Positions wanted: $5.00 per column inch per insertion. Minimum space—2 inches. Ads for Monday's paper must be in by preceding Wednesday, 2 P.M. Please enclose payment with your order.

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1—Kastrinsky 60" Calendar, Roller and Folding Table
1—CRA Spreader 36", #K 632 AC
1—Queens L & L Auto. power mach., double jacks, 54", 8 gauge, 4 bar #731

CLOVER KNITTING MILLS, INC.
'M' St. & Erie Ave., Phila. 24, Pa. Pioneer 4-1000

CALL US AT PENNELL
FOR TOP PRICES ON
MEN'S AND BOYS'
• SWEATERS
• SWIM TRUNKS
• POLO SHIRTS
• WALK SHORTS
WE'RE ALWAYS OPEN TO BUY
..WE ALWAYS BUY FAIR!
Pennell Sportswear Co., 1384 Broadway, New York 18 • LA 4-9020

FOR SALE

3—Burlington S.S. pkge. dye mach., 300 lb. cap.
4—Supreme jersey, 18", 18 cut, 24 fd., patt. wheels
2—Supreme SAAF, 26", 14 cut, 16 striping boxes
2—Wildman interlock, 26", 24 x 24 cut, 20 feed
1—Terrot 30", I special, 24 feed, 16 cut
1—Morat, 30", 24 feed, 16 cut
1—Brinton PR 19, 24", 10 cut, 16 feed
4—Jacquard TAI machines, 30", 13½ cut, 12 feed
2—Jacquard LH machines, 30", 6 cut, 6 feed
2—Jacquard TJI mach. 14¼ cut, 30", 12 fd., with 4 col. str.

SPEIZMAN KNITTING MACHINE CORP.
Main Office
508 W. 5th ST., CHARLOTTE, N. C.
Phone ED 4-5546
N. Y. C. Office
350 5th AVE., NEW YORK 1, N. Y.
Phone PE 6-0451

YOU CAN GET MORE FOR YOUR SWEATER WASTE
Orlon — Wool — Ban-Lon — Fur Blends
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106 Colyer St., Brooklyn 22, N. Y.
For Best Prices — Fast — Call
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FOR SALE

New Kastrinsky calendar machine, 84" wide, with folding table.

BOX 350V

KNITTING MILL FOR SALE

Diversified equipment, coarse and medium gauge, cable, multi-color work, Jacquards.

Selling best accounts in the country. Excellent labor area. Can be seen in operation.

BOX 350P

FOR SALE

BRUSHING Machinery

B. ORSHANSKY

217 Boerum Street Brooklyn 6, N. Y.

Tel .HYacinth 7-3120

FOR SALE – CASH OR TERMS

2—Jacquard TAI, 30", 10 cut, 12 feed, 4 color stripers
1—Universal 7 cut border machine. Practically new.
2—Jacquard LH, 30", 8 cut, 6 feed, with stripers
1—Dubied VD, 52", 12 cut, 4 bar
1—Dubied VV, 52", 12 cut 6 bar
1—Dubied VD, 44", 10 cut, 4 bar
1—68", 1—76", 1—78", 7 cut Roba. double jack machines
2—Lewis 160-2 label tackers
1—Lewis 200-1 button sewer with stand and motor
2—W&G label sewers, stands and motors
1—Glomark with 2 lamps
30—Various wire forms for sweaters and skirts
1—4 pt., 2-5 pt., 1-6 pt., 1-7 pt., 3-8 pt., 5-10 pt., 3-11 pt., 2-12 pt., 2-14 pt., Sotco loopers.

BEN WACHSMAN & CO.

Consultant for Appraisals and Liquidations

671 Bushwick Ave., Brooklyn 21, N. Y.

GLenmore 2-4936

WANTED

25 pound and 50 pound paddle machine for stretch dyeing.

BOX 340L

KNITTING MILL FOR SALE

Ordnance Gauge equipment, set up for men's and boys' shirts. Must move, sacrifice.

BOX 350N

FOR SALE

10 HP oil fired boiler, 1959 Fulton
2—30 x 60 Steam tables, new
1 Eastman cutting machine, 1959
2 HP compressor. Excellent buys.

BOX 350M

KNITTING MACHINES

6 Jacquard TR 16" circular. As is. No motors. Best offer.

LOngacre 4-1577

FOR SALE

2—TAI, 16 cut Jacquard machines.

BOX 350F

PLANT FOR SALE

Located in the South, with interesting tax loss. Equipped to manufacture sportswear. Includes flat and circular machines. For full details reply to

BOX 350C

WANTED

3 Queens Links-Links machines, 7 gauge, double jacks, 78" or 84."
2—4 cut flat V-bed machines. Universal or Queens, 60" or more.

WILSHIRE KNITTING MILLS, INC.

850 South Hill, Los Angeles 14, Calif. MAdison 7-7209, 7-7200

METRIC

NUTS • BOLTS • TAPS • DIES • WRENCHES

METRIC ALLEN STYLE SOCKET HEAD CAP SCREWS for all types of foreign equipment

IMMEDIATE DELIVERY FROM STOCK • CATALOGUE

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183 Grand Street, New York 13, N. Y. WOrth 4-5867-8

ANOTHER JK LIQUIDATION

IMMEDIATE LIQUIDATION OF HIGHWAY KNITTING MILLS, INC.
1900 Sterling Pl., Brooklyn, New York — DI 5-2360

Plant Valued At Over $40,000.00; Consisting of Bulky, Jacquard Knitting Machines, As well as Complete Sewing & Pressing Department

3—Phila. Jacq. LH Mach. 6 Cut - 30" - 6 Feed - Jacquards
1—Phila. Jacq. LH Mach. 8 Cut - 30" - 6 Feed - Jacquards
1—Phila. Jacq. LH Mach. 8 Cut - 28" - 6 Feed - Jacquards
2—Phila. Jacq. TJ Mach. 7 & 8 Cut - 28" - 4 & 6 Feed
3—Leighton Brass Ringers - 5 Cut -8¼" to 9¼"
1—Queens Model B Flat Mach. 9 Cut - 60" - H&L Ndls & Jacks
2—Roby Flat Links Mach. - 7 & 9 Cut - 76"
6—Brinton Jersey Mach. - Assorted cuts and sizes
1—Grosser Flat Mach. - 5 Cut - 28" - 4 Bar - F.A.
1—Schweiter Winder 24 Spindle; 1 - Roter Coner - 20 Spindle
2—Lamb Border Mach. - 6 & 7 Cut - Dble Head (Like New)
3—Wildman Interlock Mach. - 10 Cut - 23" - 20 Feed
5—Wildman PB-2 Mach. - 8, 9, 10 Cut - 15" to 20" - 8 Feed
1—Kastrinsky Cal Mach. - 36" - With Trolley
4—Steam Tables - 30x60, 24x48
1—Cyclo-Therm Boiler - 9.9 H.P. - 3 years old
1—Vacuum System
3—Singer Sewing Machines - Models 241-12; 251-2
2—Singer Merrowing Machines - Models 246-13;
1—Singer Label Sewer Model 240 W2
3—Merrow Machines Models A3D-W1; A3DW-3
1—Singer Bar-Tac Mach. Model 269W9
1—Singer Button Sewer Model 71-46
1—Merrow Crochet Mach Model 15 CA
1—Reece Button Hole Mach. - Model S-2
1—Union Special Differential Covering Machine
2—Dennison Pin-Ticket Mach.
1—McCreary Brush Machine 60" (Like New)
5—Looping Machines - 8, 12 & 15 Pt.
1—Eastman Straight Knife Model 254-7
1—Pitney Bowes Meter Mach
2—I.B.M. Time Clocks
1—Fairbanks Scale - 500 lbs.
1—Slitter

Asorted Baskets, Hand Trucks, Fluorescent Lights, Chairs, Tables, Gum Tape Machine, Fans

Joseph Kopelowitz, Inc.

600 Broadway, Brooklyn 6, N. Y. EVergreen 7-1145

CONTRACTORS WANTED, CONTRACT WORK WANTED

CONTRACTORS WANTED

for full fashioned and fine gauge circular transfer machines. Steady volume work on men's sweaters, shirts, for spring season.

BOX 350R

JOBBER WANTED

Long established, reliable knitting mill, making medium to better grade bulkies is interested in a reliable jobber doing volume business. We have the most modern flat and circular machines, from 5 to 2½ cut.

HYacinth 5-5349

CONTRACTORS WANTED

with 10 gauge Links and Links machines, and 10-12 cut transfer flat machines for men's knit shirts.

BOX 330K

FULL FASHIONED CONTRACT WORK WANTED

Contractor seeks additional 250 dozens per week, on men's and ladies' classics and novelties, in cashmere fur-blends and all other synthetic yarns. Finest quality workmanship. Can supply the best of references.

BOX 352

CONTRACT WORK WANTED

6 Gauge Brushed Shaggies

Well known contractor in nearby New Jersey has opening for additional jobber on ladies' or children's brushed sweaters. Interested in volume user. Reasonable labor prices.

Phone LOngacre 4-7479
or write BOX 350A

COMMISSION SPINNING WANTED
(Woolen System)

We spin from 1½-7 run. 50% of our production is spun by new machinery. We are located 200 miles from New York.

Write to BOX 331

WEAVE KNIT

Interested in knitter to knit weave knit fabric on own machine.

BOX 351

ADDITIONAL WORK WANTED

on 4 cut *Universal* flat machines.
Fine quality knitting and finishing.

BOX 350J

CONTRACT WORK WANTED

on 6—4 gauge Universal machines.
Perfectly finished garments, reasonable.

BOX 350H

CONTRACT WORK WANTED

Finishing all types of sweaters. Complete finishing plant located in Ridgewood, Brooklyn.

EMpire 6-4319

CONTRACT WORK WANTED

on Philip machines for Ban-Lon and Orlon,
and on 10 cut jersey machines for brushed goods and jerseys.

BOX 359

HELP WANTED

KNITTER-MECHANIC WANTED

on Dubied machines.
Must be able to make chains.

BOX 342

SEWING ROOM FOREMAN WANTED

for production control of ladies' and men's sweater knitting mill. Permanent position with excellent potential for right party. Mechanical experience essential.

BOX 350T

FOREMAN WANTED

Man with thorough knowledge of men's sweater operation from knitting to finishing, particularly in quality control to be in complete charge of quality control in large sweater mill. Must be willing to relocate. Excellent opportunity for right man. Price no object.

BOX 350Q

FEMALE MENDER—EXAMINER WANTED

Ladies' Sweaters

Must be experienced. Good pay. Immediate opening.

EXeter 2-5656

WANTED

Knitter-mechanic on new interlock-type machinery. Long Island mill.

BOX 340G

FOREMAN OR FORELADY WANTED

Experienced to take charge of sewing and finishing of bulky ladies' sweaters. Write giving qualifications, references and salary desired. Steady work.

BOX 350K

SHIPPING CLERK – FULL CHARGE

Must be able to supervise packing and shipping department of knitting mill producing over 2500 dozen per week.

BENTLEY KNITWEAR
1703 McDonald Ave., Bklyn. 30, N.Y. DE 9-9150

LEADING CANADIAN KNITTING MILL
SEEKS AMERICAN DESIGNER
FOR LADIES' DRESSMAKER
& NOVELTY SWEATERS

Free-lance basis. Styles submitted will be confined to Canadian market and will not conflict with American connections.

BOX 340J

LEADING YARN SPINNER SEEKS
TECHNICAL YARN MAN WITH
KNITTING BACKGROUND

to actively participate in research and development, handle test procedures and technical liaison between customers and mill. Attractive salary for qualified person.

BOX 350B

STYLIST–DESIGNER SWIMSUITS

Excellent opportunity for good, all around man with some knowledge of production and sales for swimsuit manufacturer. Liberal salary and percentage. Write giving full details in confidence to

BOX 342 EW, 2 WEST 45 ST., N.Y.C. 36

OPPORTUNITY FOR YOUNG MAN

With textile background to understudy production co-ordinator in Philadelphia firm. Exceptional opportunity for bright, conscientious and ambitious individual. Send all details in first letter.

BOX 358

MECHANIC WANTED

First class. Experienced on TJI and Links machines. Must reside in New York area. Company benefits. Write:

BOX 260K

LEIGHTON MECHANIC WANTED

Experienced only apply. Salary commensurate with ability. Call collect or write Mr. Gold.

EVergreen 7-6955

SUSAN KNITTING MILLS, INC.
104 South Fourth St., Brooklyn 11, N. Y.

all replies confidential

ASSISTANT SALES MANAGER WANTED

We have a new opening in our expanding sales organization, for a man to run our New York showroom and be an administrative assistant to our general sales manager. Applicants must meet the following requirements.

1. Must have college education, preferably with emphasis on sales, advertising and promotion.
2. Must have experience in selling better quality ladies' sweaters and matchmates to department stores and specialty stores.
3. Must have thorough knowledge of and good contacts with resident buying offices.
4. Must be good at figures, detail work and correspondence involving sales, credit matters, customers' inquiries, etc.

Please do not telephone. Submit a complete letter of history about yourself, your education, and your experience and employment in the industry. All replies will be kept strictly confidential.

PETER FREUND KNITTING MILLS, INC.

5625 Hudson Boulevard **North Bergen, New Jersey**

POSITIONS WANTED

YARN SALESMAN AVAILABLE

Connected with one concern for many years, wishes to make change. Knows the yarn business thoroughly. Is well acquainted with the trade. Has large following.

BOX 356

FACTORY MANAGER

Intensively trained, technically qualified in knitting, cutting, sewing departments. Experienced in supervision and training of knitters, cutters, plaque makers, pocket makers, Merrows, Singer, etc., piece work cost, weight control, rapid movement.

BOX 350L

YARNS WANTED, FOR SALE

WANTED FOR CASH

Worsted · Zephyr · Synthetics Cotton

We always carry a large stock of yarns, dyed on cones for immediate use.

CALL EV 8-8277
BEN BALIF

686 Flushing Ave.
Brooklyn 6, N. Y.

CENTURY YARN CO.

FOR SALE
ELASTIC YARN FOR KNITTING
● All Sizes and Colors

BEDFORD YARN CO.
79 Clifton Place
Brooklyn, N. Y.
MAin 2-1340

WE BUY SURPLUS KNITTING YARN

Machine and Hand Knitting Sizes

WALTER McCOOK & SON, INC.

711 Arch St. Phila. 6, Pa. WAlnut 5-8891

NEW YARN OFFERINGS!

AT ATTRACTIVE PRICES

1,000 lbs.—3 run, olive green, 100% wool, cones
400 lbs.—4.4 run, lt. oxford, 75% wool, 25% Orlon acrylic, cones
700 lbs.—1/24, lt. oxford, H.B. Orlon acrylic, cones
500 lbs.—1/24, pink, H.B. Orlon acrylic, cones
1,000 lbs.—1/23, oatmeal, brown & lt. brown, H.B. Orlon acrylic, cones
500 lbs.—1/15, black, Orlon acrylic, 10 denier, cones
400 lbs.—1/30, natural, Orlon acrylic, cones
400 lbs.—1/26, natural, H.B. Orlon acrylic, cones
2,000 lbs.—1/20, natural, 100% worsted, 64s quality, cones
1,000 lbs.—2/20, asst. colors, 100% worsted, cones
750 lbs.—1/16, natural, H.B. Orlon acrylic, cones
800 lbs.—5¼ run, natural, Orlon acrylic, cones
4,000 lbs.—2¼ run, brass, 75% wool, 25% Orlon acrylic, cones
500 lbs.—3 run, tangerine, 80% wool, 20% Orlon acrylic, cones
3,500 lbs.—2¼ run, lt. biege, 75% wool, 25% Orlon acrylic, cones
2,800 lbs.—2¾ run, lt. oxford, 100% wool, cones
1,000 lbs.—3½ run, lt. blue, 96% wool, 4% nylon, cones
4,000 lbs.—2/8, natural, 88% wool, 12% fur, cones

SAM SASKEN — CH 4-8733
1441 Broadway, New York 18, N. Y.

YARNS FOR SALE - At Reasonable Prices

1650 lbs.—3200 yds., loop yarns, white, peacock, ginger, black, cones
1750 lbs.—9/1, 15/1, 1/32, 50/2, 60/2, black, Orlon acrylic and Acrilan acrylic, cones
400 lbs.—2/27, maize, 100% Darvan nytril, cones
275 lbs.—1/26 char. grey Turbo Orlon acrylic, cones
400 lbs.—1/32, lt. heather, 55% Orlon, 45% Arnel, cones
2200 lbs.—3 run, 3.5 run, 5 run, lamb's wool and Orlon acrylic, cones
600 lbs.—1¾ dk. brown, 2% red, 100% Wool Shetland, cones
850 lbs.—2/14, 75% Wool, 25% Nylon, black, cones
700 lbs.—1⅞ run, loden green, gold, wool and nylon, cones
1500 lbs.—1¾ and 2¾, camel, 75% wool, 22% mohair and 3% nylon

BRITE YARNS CORP.

191 Broadway, Brooklyn 11, N. Y. EVergreen 7-1525

SERVICES, SUPPLIES FOR SALE

HAVING PROBLEMS WITH LABELING LAW?

a PIN TICKET with your WPL number and fiber content will do the job!
IMMEDIATE DELIVERY

BROADWAY THREAD CO.
658 Woodward Ave., Brooklyn, N. Y. EVergreen 2-8002

REAL ESTATE

LOFT FOR RENT

Ozone Park, N. Y. 11,200 square feet. Unrestricted, heat, elevator, sprinklers, high power, light and airy. Reasonable.

VIrginia 6-3330—LOrraine 7-1439

REPRESENTATIVES WANTED, LINES WANTED

MANUFACTURERS REPRESENTATIVE

with New York office is looking for men's full fashioned Ban-Lon mill to sell to big users.

BOX 357

BUSINESS OPPORTUNITIES

WOOL JERSEY AGENCY OPEN FOR KNITTED WOOL AND/OR COTTON NOVELTY LINES

If you seek representation in the New York women's and children's wear market, contact us. We are two personable and experienced young men with a large following. We are capable of giving you the coverage and sales that you would expect from your own organization.

BOX 350G

PARTNER WANTED

Plant consisting of fine gauge circular machines, producing better grade garments, has opening for active partner with capital, experienced in the knitwear industry. There will be no lines or mortgages on plant.

BOX 350E

PARTNER WANTED

I need an associate with capital to buy out widow's share in a going, lucrative Jacquard knitting mill. Makers of better goods only. Plant consists of 14 transfer Jacquard machines and are set-up and runnning on Jacquard. Includes all auxiliary equipment. Plant is running on men's and ladies' Jacquard sweaters.

Call me at plant—DIckens 2-6050
or at home—ESplanade 6-4585
Morris Lipsky

BANNER

is the leader in

Skein Dyeing

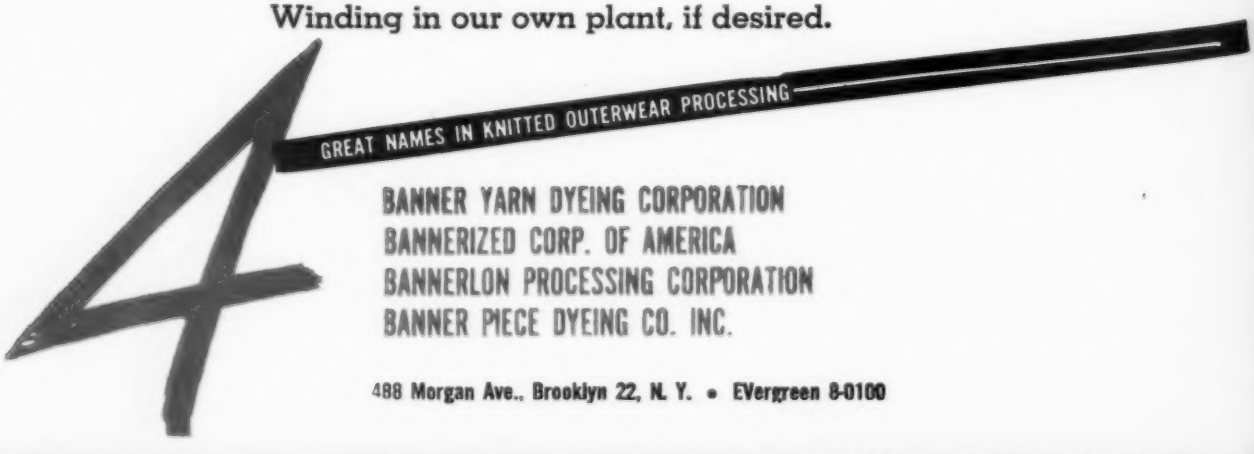
ORLON®

SAYELLE

Naturally, BANNER — famed for its research and development efforts — pioneered in the successful processing of Orlon Sayelle for knitted outerwear — and is now the acknowledged leader.

Let BANNER handle all your Orlon Sayelle dyeing requirements.

Winding in our own plant, if desired.



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